

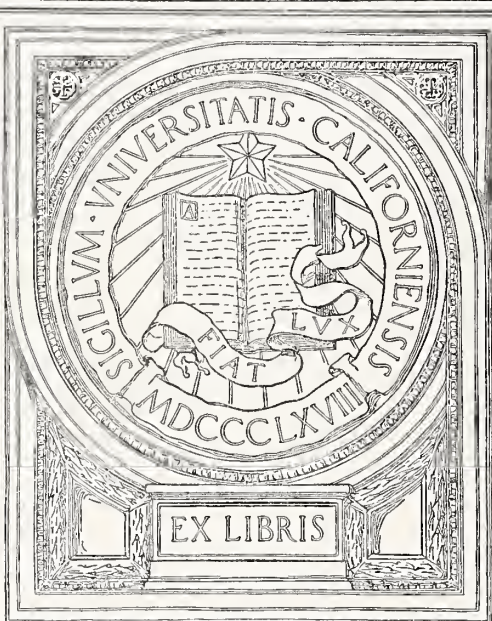
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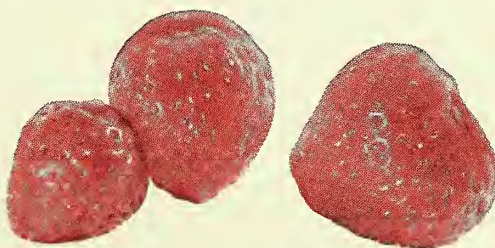
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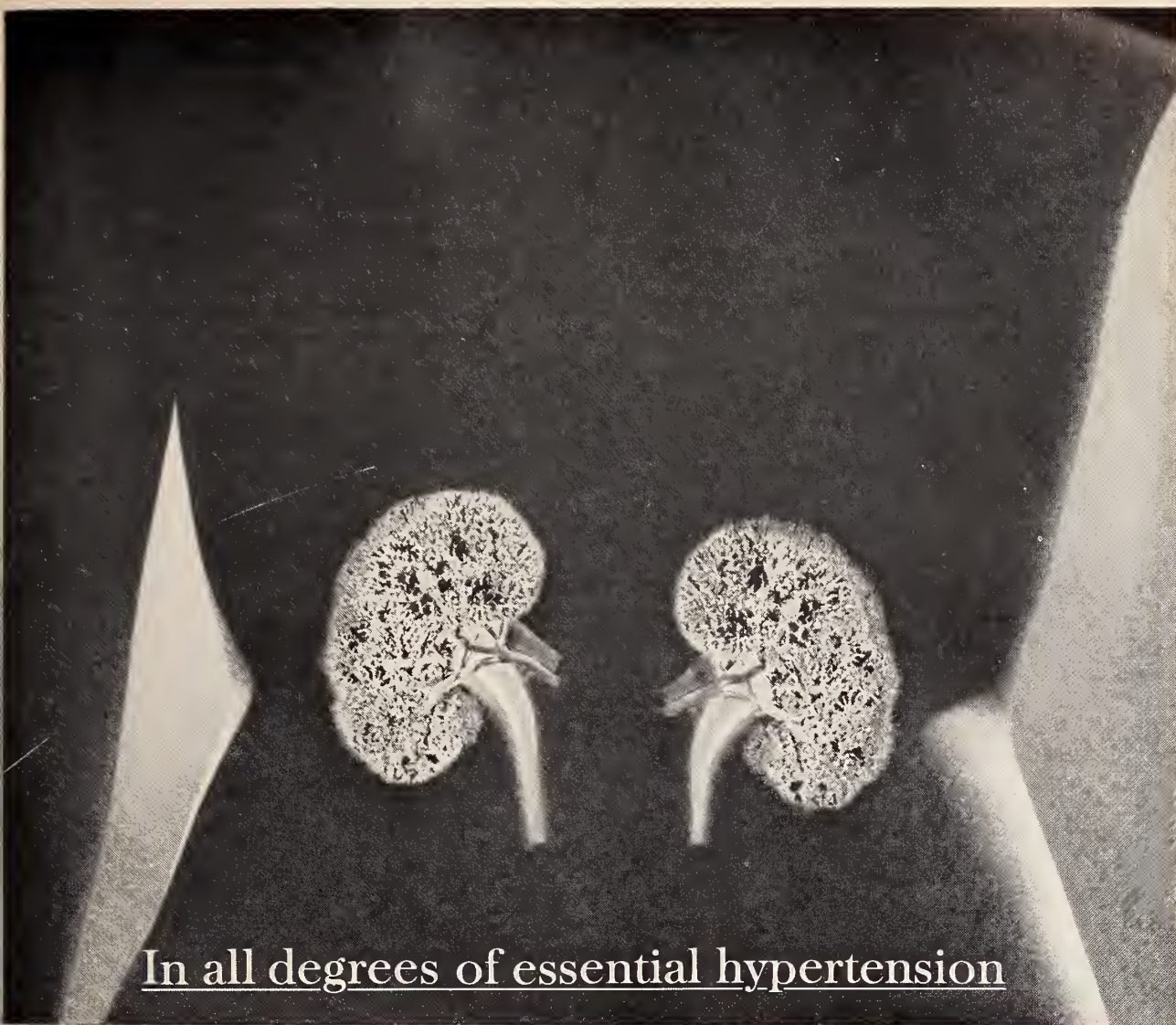
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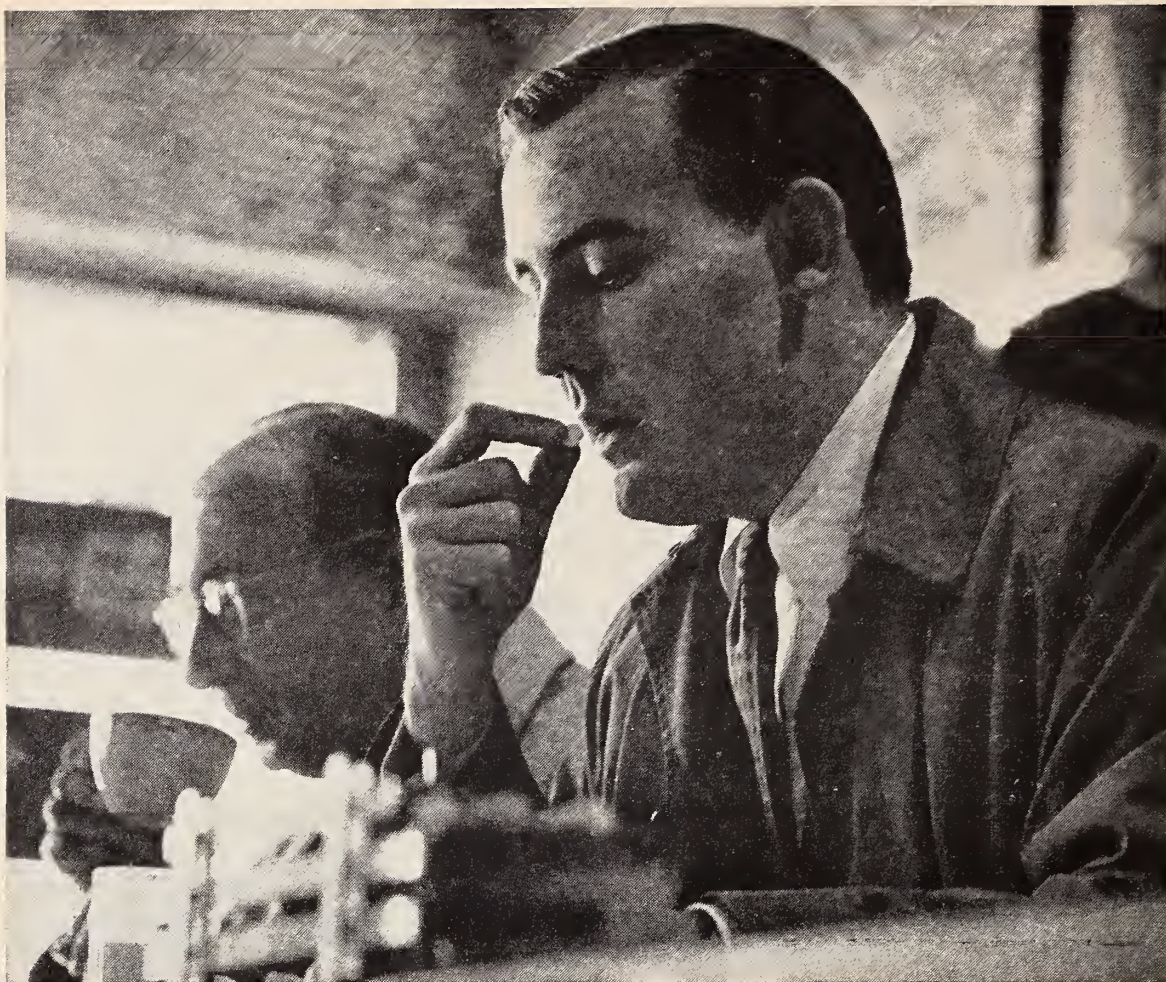
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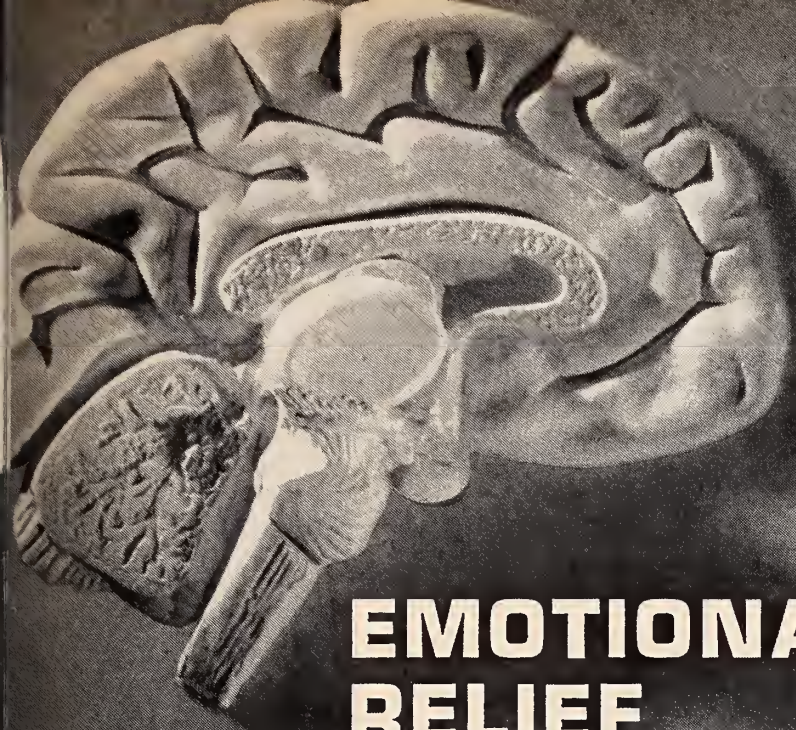
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5th Street & Alvernon, Tucson, Arizona  
Howard W. Finke, M.D. . . . . Southwestern District  
Magma Hospital, Superior, Arizona

### DIRECTOR AT LARGE

Clarence E. Yount, Jr., M.D. . . . . Past President  
P. O. Box 1626, Prescott, Arizona

### COMMITTEES - 1963-64

NOTE: The President, President-elect and Secretary are ex-officio members of all committees unless otherwise specified.

ARTICLES OF INCORPORATION & BY-LAWS COMMITTEE: Walter Brazie, M.D., Chairman (Kingman)  
BENEVOLENT AND LOAN FUND COMMITTEE: Daniel T. Cloud, Jr., M.D., Chairman (Phoenix)  
CENTRAL OFFICE ADVISORY COMMITTEE: Arthur V. Dudley, Jr., M.D., Chairman (Tucson)  
EXECUTIVE COMMITTEE: William B. Steen, M.D., Chairman, (Tucson)  
GRIEVANCE COMMITTEE: Clarence E. Yount, Jr., M.D., Chairman (Prescott)  
HISTORY AND OBITUARIES COMMITTEE: Howell S. Randolph, M.D., Chairman (Phoenix)  
INDUSTRIAL RELATIONS COMMITTEE: Oscar W. Friske, M.D., Chairman (Youngtown)  
LEGISLATIVE COMMITTEE: Jesse D. Hamer, M.D., Chairman (Phoenix)  
MEDICAL ECONOMICS COMMITTEE: Ian M. Chessner, M.D., Chairman (Tucson)  
MEDICO-LEGAL COMMITTEE: Jack E. Brooks, M.D., Chairman (Phoenix)  
PROCUREMENT AND ASSIGNMENT COMMITTEE: Joseph M. Greer, M.D., Chairman (Phoenix)  
PROFESSIONAL COMMITTEE: Robert B. Leonard, M.D., Chairman (Phoenix)  
PROFESSIONAL LIAISON COMMITTEE: Hugh H. Smith, M.D., Chairman (Tucson)  
PUBLIC RELATIONS COMMITTEE: James E. O'Hare, M.D., Chairman (Tucson)  
PUBLISHING COMMITTEE: Robert F. Lorenzen, M.D., Editor-in-Chief, Chairman (Phoenix)  
SCIENTIFIC ASSEMBLY COMMITTEE: W. Albert Brewer, M.D., Chairman (Phoenix)

### COUNTY MEDICAL SOCIETY OFFICERS FOR 1963

APACHE: Jack I. Mowrey, M.D., President, McNary Hospital, McNary; Ellis W. List, Jr., M.D., Secretary, McNary Hospital, McNary.  
COCHISE: William W. McKinley, M.D., President, Box 1192, Bisbee; Charles W. McMoran, M.D., Secretary, Box 278, Sierra Vista.  
COCONINO: J. Garland Wood, M.D., President, Box W, Flagstaff; George H. Yard, M.D., Secretary, 206 W. Hunt Ave., Flagstaff.  
GILA: Robert V. Horan, M.D., President, Miami Inspiration Clinic, Miami; Jesse E. Jacobs, M.D., Secretary, Box 1208, Miami.  
GRAHAM: Donald E. Nelson, M.D., President, 503 Fifth Avenue, Safford; Thomas W. Jensen, M.D., Secretary, 702 Eighth Avenue, Safford.  
GREENLEE: Hugh LaMaster, M.D., President, Box 1597, Clifton; Charles B. Daniell, M.D., Secretary, Morenci Hospital, Morenci.  
MARICOPA: Wallace A. Reed, M.D., President, 222 West Osborn Rd., Phoenix; Clifford E. Ernst, M.D., Secretary, 909 E. Brill St., Phoenix.  
(Society Office - 2025 N. Central Avenue, Phoenix)  
MOHAVE: Walter Brazie, M.D., President, Masonic Building, Kingman; John J. Standifer, M.D., Secretary, 412 E. Oak Street, Kingman.  
NAVAJO: Donald F. DeMarse, M.D., President, Box 700, Holbrook; Robert J. Haley, M.D., Holbrook Clinic, Holbrook.  
PIMA: Philip G. Derickson, M.D., President, 744 N. Country Club Rd., Tucson, Elliott E. Stearns, Jr., M.D., Secretary, 2442 E. Elm St., Tucson.  
(Society Office - 57 E. Jackson St., Tucson)  
PINAL: Glen H. Walker, M.D., President, 291 W. Wilson Ave., Coolidge; James H. Boyd, M.D., Secretary, 291 W. Wilson Ave., Coolidge.  
SANTA CRUZ: William R. Potzler, M.D., President, Stage Bldg., Nogales; Charles S. Smith, M.D., Secretary, Gebler Building, Nogales.  
YAVAPAI: Clarence E. Yount, Jr., M.D., President, P. O. Box 1626, Prescott; William R. Shepard, M.D., Secretary, 506 Gurley St., Prescott.  
YUMA: Ellis V. Browning, M.D., President, 407 N. 16th St., Yuma; James Volpe, Jr., M.D., Secretary, 1801 Sixth Ave., Yuma.

### WOMAN'S AUXILIARY TO THE ARIZONA MEDICAL ASSOCIATION - 1963-64 Board Members

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Route 8, Box 18, Tucson, Arizona  
2nd Vice President . . . . . Mrs. William Scott (Jean)  
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Treasurer . . . . . Mrs. Joe L. Bonnet (Lorri)  
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Recording Secretary . . . . . Mrs. Richard Dexter (Bobbe)  
6842 East Tawa, Tucson, Arizona  
Corresponding Secretary . . . . . Mrs. Robert Price (Dorothy)  
163 West Myrtle, Phoenix 21, Arizona  
Director (1 year) . . . . . Mrs. Frederick Knight (Mary)  
618 Central Avenue, Safford, Arizona  
Director (1 year) . . . . . Mrs. Seymour Shapiro (Arlene)  
5433 East Eighth Street, Tucson, Arizona  
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1400-16th Place, Yuma, Arizona

### SOCIEDAD MEDICA DE ESTADOS UNIDOS DE NORTE AMERICA Y MEXICO

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Treasurer for the United States . . . . . Dr. Lucy Verneti  
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Treasurer for Mexico . . . . . Dr. Eduardo Gonzalez Murguia  
Juarez 673, Guadalajara, Jal., Mexico  
Executive Secretary for Mexico . . . . . Mr. Alfredo Patron  
Mazatlan, Sinaloa, Mexico

Complete officer and committee listings will appear in the May and December issues.



# Arizona Medical Association Reports

## BOARD OF DIRECTORS

Meeting of the Board of Directors of The Arizona Medical Association, Inc., held Sunday, November 24, 1963, in the French Quarter of the Safari Hotel, Scottsdale, Arizona, convened at 10:08 a.m., James E. O'Hare, M.D., Vice-President and Chairman, presiding.

### ROLL CALL

PRESENT: Drs. Baldwin, Earl R.; Beaton, Lindsay E.; Brazie, Walter; Brewer, W. Albert, Pres.-Elect; Derickson, Philip G.; Dudley, Jr., Arthur V., Treas.; Dysterheft, Arnold H.; Eisenbeiss, John A.; Finke, Howard W.; Hamer, Jesse D.; Henderson, Charles E., Secty.; Jarrett, Paul B.; Jensen, Thomas W.; Lorenzen, Robert; McNally, Joseph P.; O'Hare, James E., Vice-Pres. and Chairman; Price, Robert A.; Rhu, Hermann S.; Smith, Noel G.; Steen, William B., Pres.; Taylor, Ashton B.; Yount, Jr., Clarence E.; Messrs. Boykin, Paul R., Assistant Executive Secretary; Carpenter, Robert, Executive Secretary; Ledwidge, Joseph A., Executive Assistant; Jacobson, Edward, Counsel.

GUESTS: (ad hoc Committee for Appraisal of Arizona Blue Shield) Drs. Chesser, Ian M., Chairman; Cloud, Jr., Daniel T.; Frissell, Ben P.; Stevenson, Arthur C.; Young, Woodson C.; (National Association of Blue Shield Plans) Dr. Blake, Henry S., Board Chairman,

## MEMORIAL TO THE LATE JOHN FITZGERALD KENNEDY, PRESIDENT

William B. Steen, M.D., President, asked all present to rise and called upon Mr. Edward Jacobson, Counsel, to speak in memory of the late John Fitzgerald Kennedy, President of the United States, recently assassinated, following which the assembly will remain standing in a moment of silent prayer.

MR. JACOBSON: Gentlemen, I wonder if you would all stand. On these days of sorrow when the hearts and minds of men around the globe, join with the sympathies of Americans for the widow and family of John Fitzgerald Kennedy and join with the prayers of Americans for the guidance, wisdom and strength for the new President of the United States, Mister Lyndon B. Johnson, perhaps we can take some comfort in the idea that the shock and horror shared across the globe by men of different faiths, different goals, different economic views and ideals, at least indicates in part, that unilateral action outside the scope of law is no longer an acceptable procedure in this world. Amen.

It was unanimously moved and carried that the Board of Directors authorize the President, in behalf of the Association, to forward an appropriate telegram to Mrs. John Fitzgerald Kennedy and the family of the late John Fitzgerald Kennedy, extending to them the condolences of this Association; that the remarks of Counsel be spread in full upon the minutes of this meeting and published in *Arizona Medicine*; and that the Central Offices of the Association close Monday, November 25, 1963, in respect to and mourning for the late President of the United States.

Chicago, (and member — Board of Directors of Medical Indemnity of America, Topeka, Kansas) Messrs. Castellucci, John W., Executive Vice-President, Chicago; Miller, Jr., William E., Assistant to the Executive Vice-President, Chicago; (Arizona Blue Shield Board) Dr. McCulley, Robert A., President; (Maricopa County Medical Society) Drs. Brooks, Jack E., Past-President; Reed, Wallace A., President-Elect; Mr. Pompelli, John, AMA Field Service Representative.

EXCUSED: Dr. Barker, Jr., Clyde J.

### MINUTES

Minutes of the meeting of the Board of Directors held June 9, 1963 approved.

## APPRAISAL OF ARIZONA BLUE SHIELD REPORT

Following appropriate introductions, Doctor Henry S. Blake, Board Chairman, National Association of Blue Shield, addressed the group, followed by Mr. John W. Castellucci, Executive Vice-President of that body, who read the official report of findings of the survey team relating to the Arizona Blue Shield Plan. A copy will be filed with the Association and made a part of the record.

On motions duly made and carried, as amended, it was determined that the Board of Directors of ArMA on receipt of the recommendations of the ad hoc Committee for Appraisal of Arizona Blue Shield unanimously recommends to the Executive Committee (of Blue Shield) that it defer the meeting (of the Blue Shield Corporate Body, scheduled for Saturday, November 30, 1963) until January.

## BENEVOLENT AND LOAN FUND COMMITTEE

On motions duly made and carried, as amended, it was determined that this Association accept the proposal of the Valley National Bank in the matter of the medical student loan program, subject to Counsel's review and approval of the final draft of agreements to be presented; that the total amount of the then outstanding student loans to which the Association's guarantee would apply, would at no time exceed sixty-five percent (65%) of the then annual budget; and that any standard, acceptable printed form of resolution required by the Valley National Bank be considered hereby passed.

## EXECUTIVE COMMITTEE REPORT

Arizona Board of Health — Commissioner

Members of the Arizona Board of Health and the Commissioner were interviewed October 27, 1963. A recent press release indicates Commissioner Lloyd M. Farner, M.D., was notified by the Board of Health that his contract will not be renewed for the next fiscal year. Report received.

The Board of Health seeks Association support of three legislative measures — (1) raise statutory limit of Commissioner's salary to \$22,000.00; (2) supplementary budget of \$85,120.00 for operation of new Tuberculosis Sanatorium during balance of fiscal year 1963-64; and (3) operating budget increase for fiscal year 1964-65. Referred to Legislative Committee suggesting support of Board of Health.

Central District Director

Clyde J. Barker, Jr., M.D., Central District Director resigns from the Board and it was regularly moved and



# Arizona Medical Association Reports

unanimously carried that we accept the resignation.

The Maricopa County Medical Society delegation of the Board requested deference to the next meeting of the Board a replacement pending consideration and recommendation of the Maricopa County Medical Society.

## Meeting Attendance Record

Tabulations of meeting attendance records of members of the Board of Directors and Standing Committees were reviewed with a view of replacing those not interested in assignment. Though the President reported he endeavored to seek component society cooperation and suggestion in filling vacancies this year, little achievement resulted. The President-Elect will consider next year.

## ARMPAC

Vacancies, appointments and/or reappointments to ARMPAC Board of Directors to be considered in February, 1964.

## Standing Committee Memberships

Presidential interim appointments confirmed: No replacement to Medical Economics Committee; Charles P. Neumann, M.D. (Tucson) member Medico-Legal Committee; Richard L. Dexter, M.D. (Tucson) member Legislative Committee; and Charles W. Elkins, M.D. (Tucson) member Industrial Relations Committee.

## Aid to Totally and Permanently Disabled

Component county medical societies were contacted, seeking cooperation and respective appointment of Appeal Committees to be made available to Arizona Department of Welfare as services are requested in instances of appeals, in instances of totally and permanently disabled persons eligible for aid benefits. Report received.

## Board of Medical Examiners

Accepts report of Board of Medical Examiners — State of Arizona dealing with operations indicating its current ability to assume fully its financial responsibilities. Received.

## AMA Clinical Meeting

William B. Steen, M.D., President, authorized at Association expense to attend the Clinical Meeting of AMA at Portland, Oregon, December 1 through 4, 1963.

## AMA Delegates

Milford O. Rouse, M.D., Speaker, AMA House of Delegates, extols services of Arizona delegates, Lindsay E. Beaton, M.D. (Tucson) and Jesse D. Hamer, M.D. (Phoenix). Received.

## By-Laws Amendment

Accepts recommendation that Chapter IX Dues and Assessments (of the By-Laws), Section 1, providing for establishment of February fifteenth as delinquency date in payment of annual dues. Resolution authorized.

## Benevolent and Loan Fund

Transfer of \$5,000.00 principal cash in current Benevolent and Loan Trust Fund with Valley National Bank to proposed new Trust, and determination of status of interest derived from current Valley National Bank Loan Fund held in abeyance.

## Membership Classification Changes

COCHISE: P. Paul Zinn, M.D., Active to Active — Dues Exempt, account 70 Years, effective 1-1-64.

MARICOPA: Herman W. Liplow, M.D., Active to Associate — Dues Exempt, account Residency Training,

effective 1-1-64.

Richard O. Schultz, M.D., Service to Affiliate — Dues Exempt, account Teaching University of California, effective 1-1-64.

Stanley Wang, M.D., Active to Associate — Dues Exempt, account Residency, effective 1-1-64.

Lucian M. Tompkins, M.D., Active — Dues Exempt — 70 Years to Associate — Dues Exempt, account retirement, effective 10-27-63.

Mabel I. Adams, M.D., Active — Dues Exempt — 70 Years to 50 Year Club — Dues Exempt, effective 1-1-64.

Henry Trautman, M.D., Active, declines Dues Exemption, account 70 Years.

Virgil Counseller, M.D., Active to Active — Dues Exempt, account 70 Years, effective 1-1-64.

Charles M. Ploussard, M.D., Active to Associate — Dues Exempt, account Illness, effective 1-1-64.

V.A. Mulligan, M.D., Active to Associate — Dues Exempt, account Illness, effective 1-1-64.

John William McKinstry, Jr., M.D., Active retroactive to March, 1963.

PIMA: Donald Stimson Bethune, M.D., Active — Dues Paid 1-29-63; Deceased 5-6-63; Dues refund authorized.

Loren F. Taylor, M.D., Active to Associate — Dues Exempt, account University of Arizona Law Student, effective 1-1-64.

SANTA CRUZ: Juan S. Gonzalez, M.D., Active to Active — Dues Exempt, account 70 Years, effective 1-1-64.

YAVAPAI: Edward J. Gungle, M.D., Active — Dues Exempt — 70 Years to 50 Year Club — Dues Exempt, effective 1-1-64.

## Guides — Recognition of Specialists

Recommendation not to approve suggested "Guides for the Recognition of Specialists by Industrial Commission of Arizona for Rendering Surgical Services to Industrial Claimants" accepted, Charles W. Elkins, M.D., to be so informed.

## Arizona Society of Internal Medicine

Recommended changes in fee schedule applicable to industrial cases, approved by the Arizona Society of Internal Medicine. Approved.

## Cardiology — Psychiatry

Doctor Hamer commented that there continues to be continuing disparity as regards fees in the matter of consultations in the fields of cardiology and psychiatry. Some consideration should be given to adopt a schedule following the theory used in the field of anesthesiology. Currently, only \$15.00 is paid for two hours. Possibly a fee of \$15.00 for the first half hour should be established in the instance of consultation or for expert testimony at either Industrial Commission hearings or at Court hearings, with an additional charge of say \$5.00 for each fifteen minutes thereafter.

It was regularly moved and unanimously carried that we urge (the Industrial Commission of Arizona) to establish a fee of \$15.00 for the first half-hour and \$5.00 for each additional fifteen minutes thereafter for consultation or for expert testimony at either Industrial Commission hearings or at Court hearings.

## Medicare Contract No. DA-49-192-MD-116

Confirmed execution of Supplemental Agreement ID No. 11602 — Annex I — Schedule Article 3.1 — De-



pendents of Military Personnel of NATO Countries.

## **Medicare Contract No. DA-49-192-MD-64**

Determined to defer execution (a) Three-party release form, Contractor's release, (b) Three-party Assignment form, Contractor's Assignment of Refunds, rebates, credits and other amounts, (c) Supplemental Agreement Modification ID No. 6405, Annex I, Allowable Cost and Payment for period 3-1-62 to 2-28-63, \$1.74 — negotiate claim rate with statement of balance due government by fiscal administrator, \$3,202.10 and (d) Cumulative Claim and Reconciliation, particularly payments number 1-32, 3-1-62 to 2-28-63 — \$450,190.59, until March 1, 1964 (one year after expiration of term).

## **Medicare Rules and Regulations**

Medical and Chirurgical Faculty of Maryland expressed desire to have certain rules and regulations modified associate with the Medicare Program, especially certain portions of the Fee Schedule operative. No action.

## **Mental Health**

Arizona Psychiatric Society seeks Board reasons denying endorsement of its program of establishment of family psychiatric out-patient clinics undertaken and/or proposed by the Arizona Mental Health Association (action taken 5-1-63).

Doctor Beaton stated: It is merely the hope of AMA under the new President's mental health message that such clinics be established at community hospitals, where family physicians can take care of their own patients in their own hospitals; and it was our hope that this would be the future development rather than the kind of thing indicated.

Response directed accordingly.

## **Fund Drives**

Sponsorship of Fund Drives, March of Dimes (National Foundation), such support should be on the basis of individual or local component county medical society within a specific area. No action.

## **Membership Attendance**

Tabulation of membership attendance at meetings of Scientific Assembly Committee, 1960 to date, reviewed. Possibly four members should be replaced for lack of interest. President-Elect to consider next year.

## **ArMA Resolution No. 20**

It can be said that speakers participating in the scientific program during the Annual Meeting of 1964 will encompass the fields of internal medicine, surgery, obstetrics and gynecology, and pediatrics as envisioned in Resolution No. 20, adopted by the House of Delegates of ArMA.

## **Maryland — Resolution**

Medical and Chirurgical Faculty of Maryland — Resolution adopted by its House September 13, 1963, requests AMA to review its entire policy regarding Federal Funds for medical services, staffing and construction, bearing in mind inadvisability in general of use of such funds, and report. In the light of this Association's previous position, delegates were instructed to vote against such resolution should it be presented.

## **Medical Assistants**

American Association of Medical Assistants, Inc. expresses appreciation of support of this Association in its constituent chapter. Received.

Arizona Medical Assistants Association requests this Association to appoint one of six doctors to serve on its Advisory Board. No action.

## **Oregon — AMA President-Elect**

Oregon State Medical Society proposes the candidacy of Raymond M. McKeown, M.D. for President-Elect of AMA. Received.

## **AHA — Pharmacy Legislation**

Arizona Hospital Association calls attention to pharmacy legislation proposed for introduction in Arizona in 1964. Referred to Legislative Committee for consideration and report.

# COMMUNICATIONS

## **Iowa — AMA President-Elect**

Donovan F. Ward, M.D., Dubuque, Iowa, endorsed by Iowa Medical Society as candidate for office of President-Elect of AMA. Received.

## **DC — Resolution**

Medical Society of District of Columbia proposes introduction of resolution in the AMA House which would rescind June, 1963, action to the effect that "the AMA record itself as opposed to any system or program by which any part of an intern's or resident's salary is paid out of fees collected by the attending physician or out of fees collected under any type of medical-surgical insurance coverage," thereby enabling any physician who might feel the responsibility of the medical profession to assist in the development of a plan of appropriate financial support of interns and residents to voluntarily contribute to a fund in support of such a plan without acting in a manner contrary to an expressed attitude of the AMA but which is in accordance with his personal rights. Delegates instructed to vote against such resolution, if presented.

## **Presidents Conference**

Suggested plan for expansion of activities of Conference of Presidents and other Officers of State Medical Associations with response questionnaire. No action.

## **Vermont — AMA Trustee**

James P. Hammond, M.D., Bennington, Vermont, proposed as candidate of Vermont State Medical Society for position of AMA Trustee, should Doctor McKeown of Oregon again seek the office of President-Elect of AMA. Received.

## **Long Term Care Institute — Tucson**

AMA asks that the President of this Association greet the participants on its behalf at the Institute on Long Term Care Facilities to be held in Tucson, December 4 through 6, cooperating with the American Hospital Association. Received, Doctor Steen to determine his availability.

## **Children's Colony**

Mrs. Nathalia McDonald, Secretary, Arizona Children's Colony Parents (Phoenix) seeks Association opinion on changing the Arizona Children's Colony from its present status and putting it under the care of the State Department of Health. Advise matter previously brought to the attention of this Association and that it is being investigated and it is indicated action will be recommended. Response directed.

MEETING ADJORNED AT 5:00 P.M.

Charles E. Henderson, M.D.  
Secretary

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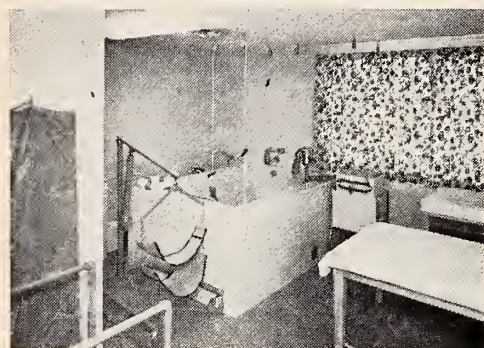
## PROFESSIONAL CARE

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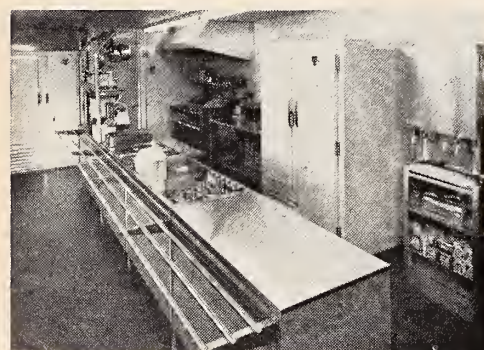
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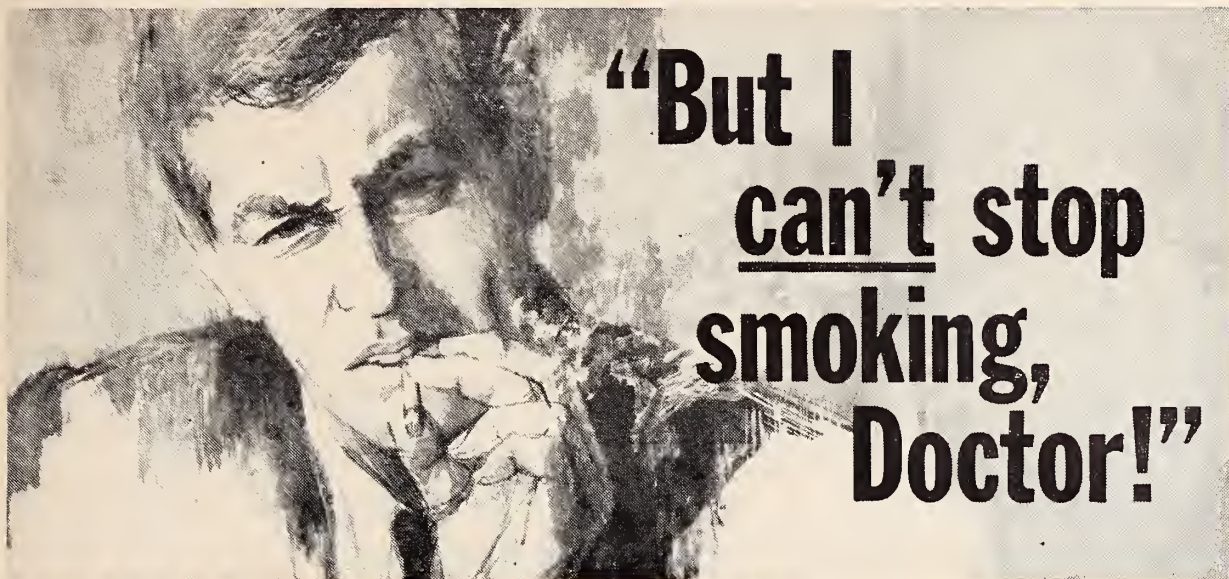
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References: 1. Goodman, L. S. and Gilman, A.: *The Pharmacological Basis of Therapeutics*, New York, Macmillan, 1960, Ed. 2, pp. 620-622; 2. Edmunds, C. W.: *J. Pharmacol. and Exper. Therap.*, 1:27, 1909; 3. Hazard, R. and Savini, E. *Gand.*, 92:471, 1963. 4. Dorsey, J. L.: *Ann. Int. Med.*, 10:628, 1936; 5. Rasmussen, K. B.: *Ugeskr. laeger*, 118:222, 1956; 6. Ejrup, B.: *Sven. Lak. Tid.*, 53:2634, 1956; 7. Jochum, K. and Jost, F.: *Munch. med. Wchnschr.*, 103:618, 1961; 8. Jost, F. and Jochum, K.: *Med. Klin.*, 54:1049, 1959; 9. *Smoking and Health*, Summary and Report of the Royal College of Physicians of London on Smoking. New York, Pitman, 1962.

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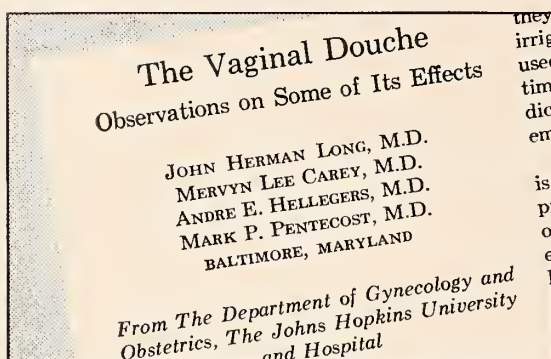
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1. West. J. Surg., Obsts. & Gynec.: 71:122-127, 1963

\*The medicinal powder used in this study was META CINE®, a scientifically formulated preparation containing: papain, lactose, citric acid, methyl salicylate, eucalyptol, menthol and chlorothymol.

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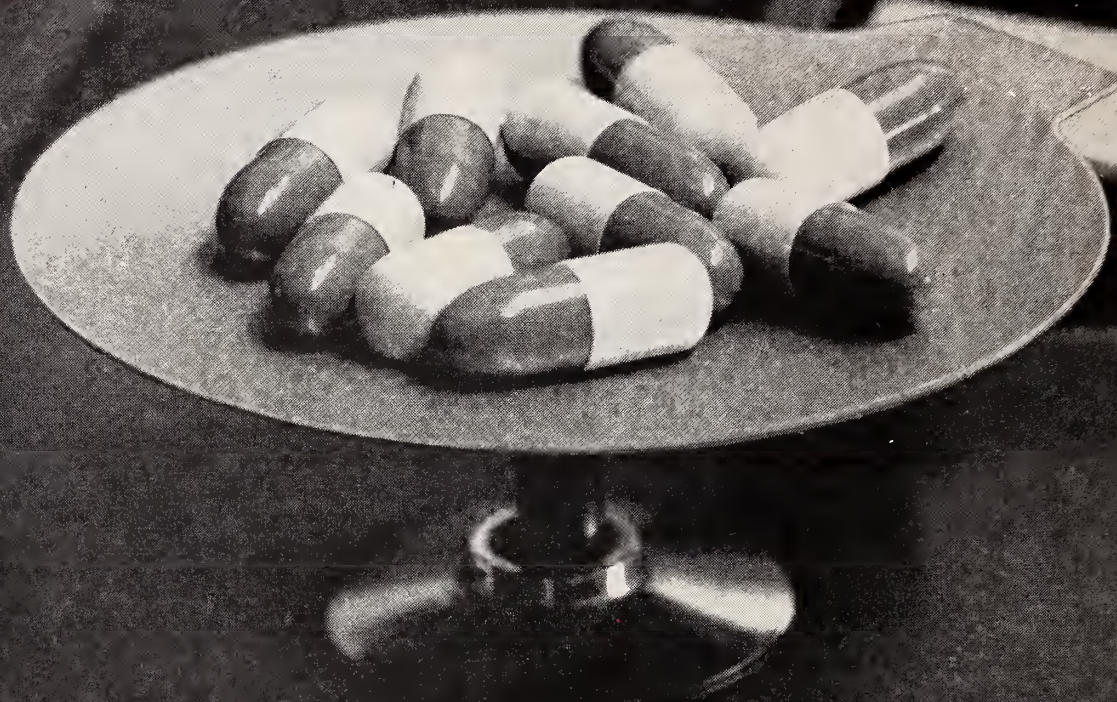
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John A. Udall, M.D.

# Long Term Anticoagulation Therapy: Stabilization by Dietary Fixation

by

John A. Udall, M.D.

The author has done a good job of clinical investigation and reports it thoroughly in an interesting and timely paper.

THE instability of prothrombin time response to the coumarin anticoagulant drugs (CAD) has been a major problem in successful anticoagulation therapy. Various authors have reported their patients to be in the effective range of anticoagulation 34% (1), 60% (2), 70% (3), and 93% (4) of the time. Wright (5) has described perfect control of anticoagulation to be exceedingly difficult to achieve. Excessive and inadequate anticoagulation carry the risks of hemorrhage and thrombosis respectively (6).

It is believed that vitamin K is essential for the production of 4 clotting factors by the liver, and that the CAD competitively inhibit this enzymatic action of vitamin K to produce a state of anticoagulation (7) (8). This concept is portrayed in the diagram on the following page.

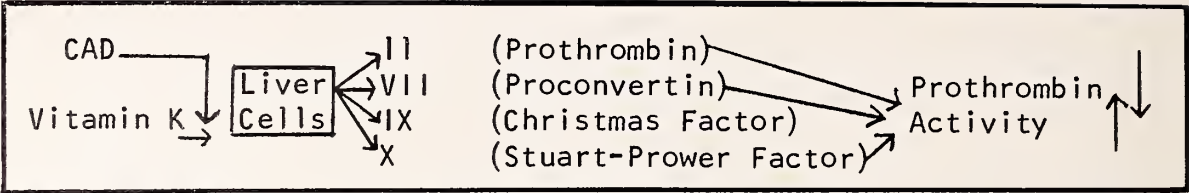
The animal experiments of Collentine and Quick (9) and the clinical experiments of Rehbein (10) strongly suggest that, in anticoagulation therapy, a dynamic balance exists between

the amounts of vitamin K and CAD available to the liver, and the resultant prothrombin activity of the plasma. Viewing anticoagulation therapy as a "conditioned vitamin deficiency," the available vitamin K appears to assume an equal importance to the available CAD in the production of a stable prothrombin response. Yet in long term anticoagulation therapy no attention is directed to the amount of vitamin K available to the liver. A theoretically important variable may thus be neglected. Rather than frequent changes in the dosage of CAD as are often made in anticoagulation therapy, it might be more reasonable to fix, if possible, the amount of both CAD and vitamin K available to the liver from day to day and thereby obtain a more stable prothrombin response.

Shortly after the discovery of vitamin K, Dam (11) found that rats, dogs and guinea pigs do not develop hypoprothrombinemia on a vitamin K free diet. Greaves (12) confirmed this finding in most of his rats which were fed a vitamin K free diet (65/77), and showed that these rats continued to excrete significant amounts of vitamin K in their feces. These observations led to the current theory that bacterial synthesis and

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absorption of vitamin K in the lower intestine provides a major source of this vitamin in mammals (13). Dietary vitamin K has been assigned a lesser role in meeting mammalian needs (14). However, Barnes and Fiala (15) have presented recent evidence that endogenous vitamin K may not be available to mammals by primary absorption, but only after coprophagy. If this is so, dietary sources in humans assume new importance.

It is postulated that dietary variations in vitamin K may play an important role in the prothrombin time instability which is often encountered in long term anticoagulation therapy. This hypothesis was investigated in an eleven month anticoagulation study in which one healthy subject (the author) was utilized. A fixed dose of CAD was ingested each day and daily prothrombin determinations (5 days per week) were made throughout the entire study.\*

Methods and Materials:

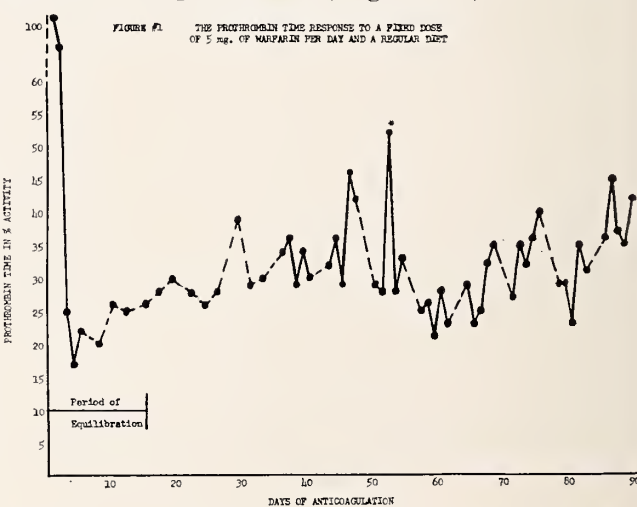
Warfarin\* was selected as the CAD for this study. It is highly soluble and believed to be almost 100% absorbed from the intestinal tract (16). A safe range of anticoagulation was sustained in the test subject for 7 months by a fixed dose of 5 mg. of warfarin each day and for 3 months by a fixed dose of 15 mg. of warfarin and 5 mg. of vitamin K\*\* each day. A 2 ml. venous blood sample was drawn each week day morning for a Quick prothrombin test at the clinical laboratories of the San Francisco General Hospital. Daily blood samples were disguised under the name of a hospitalized patient and the requisitions for the tests were written by a hospital intern. To maintain this disguise a different patient's name was used and a new intern was requested to write the test requisitions every two weeks. Thus, the laboratory personnel had no knowledge of the existence of this study. A Clot Timer\*\*\* is in use at the San Francisco General Hospital for prothrombin testing. This

device electrically times both the beginning and the end of the Quick prothrombin test. Highly reproducible results have been obtained. The first 100 blood samples were sent to the laboratory in duplicate, disguised under two different patients' names. The average difference of these duplicate determinations was 3.5% prothrombin activity. Excluding 3 duplicate determinations in which a very wide difference was obtained, i.e., 29%, 41% and 26%, the average difference was only 2.7% prothrombin activity.

One form of thromboplastin\* was in use throughout the entire study.

The study was divided into 4 sequential parts, as follows:

Part I. A state of anticoagulation was induced by a 40 mg. dose of warfarin, followed by a 90 day period of observation of the prothrombin response to a fixed dose of 5 mg. of warfarin per day and a regular diet. (Fig No. 1).

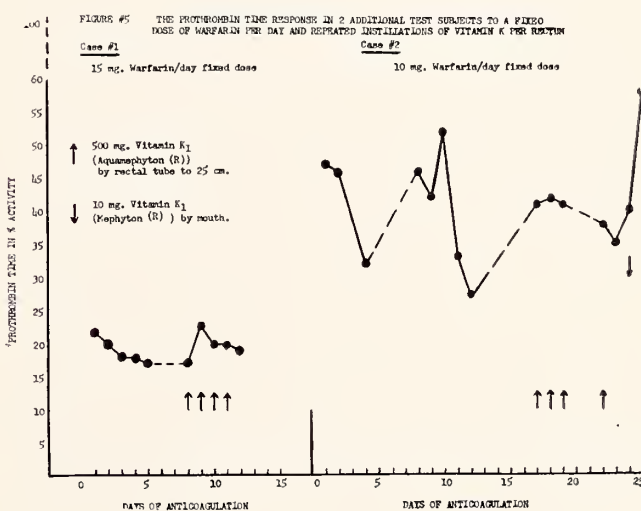
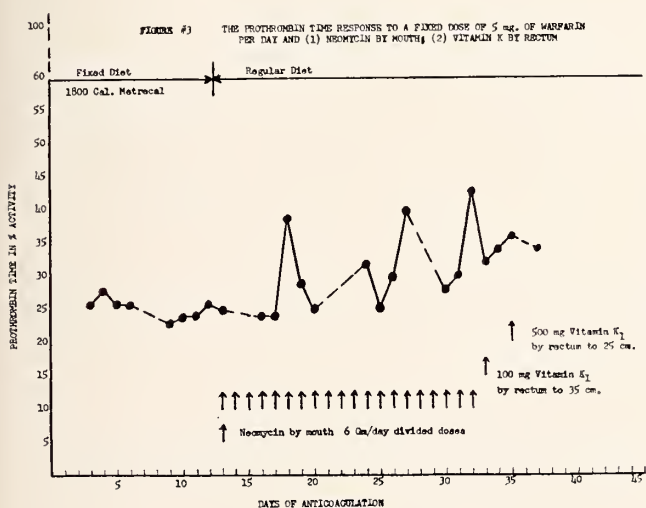
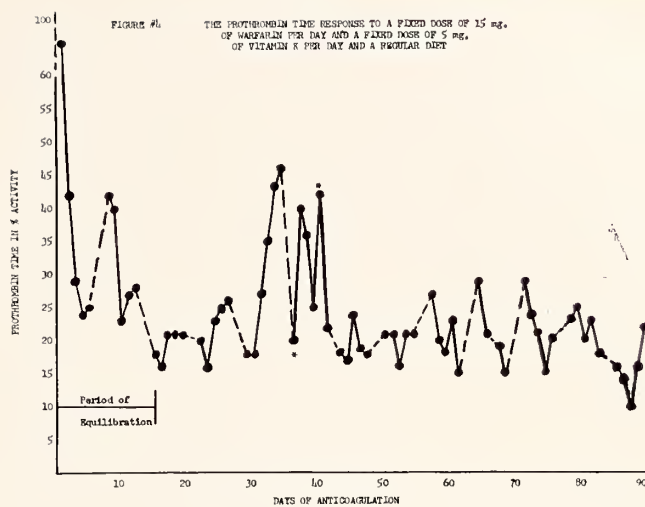
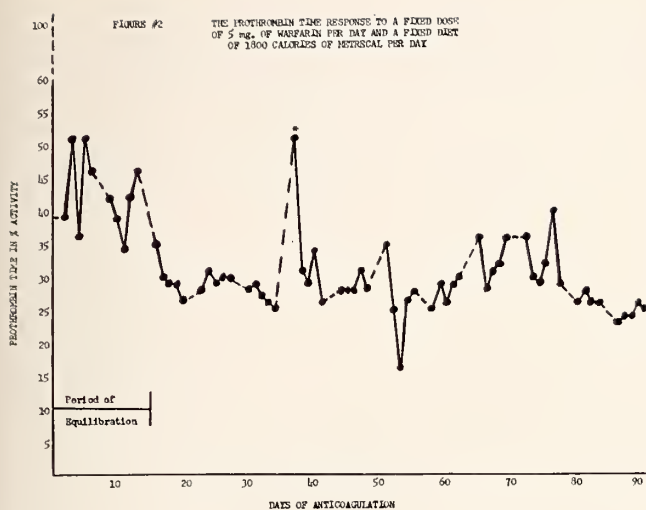


Part II. A comparable 90 day period of observation was made utilizing the same fixed daily dose of warfarin and a fixed daily diet of 1800 Calories of Metrecal\*\* (Fig. No. 2). No other food was ingested.

\*Except during weeks 2, 3, 4, and 5 of Part I when prothrombin determinations were performed only on Mon., Wed., and Fri.  
\* Panwarfin (R)  
\*\* Mephyton (R)  
\*\*\*Manufactured by Mechrolab of Mountain View, California

\* Simplastin (R)  
\*\*Metrecal is described as a special dietary food that contains ample quantities of all known nutrients required by normal persons. The vitamin K content is unknown. Dr. Edward C. McKeon of the Edward Dalton Co., Evansville, Indiana, kindly supplied the Metrecal for this study and the following statement concerning its vitamin K content. "The milk, soya flour, corn oil and starch used in Metrecal are quite uniform within lots and between lots. Each lot must meet our rigid specifications before its is accepted. We would, therefore, expect the vitamin K content of each of these ingredients to be fairly constant."





**Part III.** Next, a 25 day experiment was conducted to indirectly assess the role of endogenous vitamin K in meeting human needs (Fig. No. 3). The degree of hypoprothrombinemia produced by 5 mg. of warfarin per day and a regular diet was established in Part I of this experiment to be in the range of 20% to 40% prothrombin activity. Using this established prothrombin response it was proposed to detect any change in the amount of available vitamin K by a decrease or increase in the prothrombin activity beyond this 20% to 40% range. To decrease the endogenous supply of vitamin K by reducing the intestinal flora, 6 Gms. of neomycin per day (1 Gm. every 4 hours) were taken by mouth over a 20 day period. To increase the amount of vitamin K present at the site of endogenous production, a large dose of this vitamin was instilled into the descending colon on two different days.

A dose of 100 mg. of vitamin K\* and 1 Gm. of bile salts\*\* were instilled to 35 cm. via a rectal

tube introduced through a sigmoidoscope. Two days later, a 500 mg. dose of vitamin K was instilled to 25 cm. by simple rectal intubation. No bowel movement followed either instillation of vitamin K for over 12 hours. The prothrombin time response to repeated instillations of 500 mg. of vitamin K by rectal intubation to 25 cm. was further studied in two ambulatory patients who were receiving fixed daily doses of 15 and 10 mg. of warfarin respectively (Fig. No. 5).

**Part IV.** A final 90 day period of observation was made of the prothrombin response to a fixed daily dose of 15 mg. of warfarin and a fixed daily dose of 5 mg. of vitamin K while the test subject ate a regular diet (Fig. No. 4). An initial 30 day period (not reported in Figure No. 4) was required to find a suitable dose of warfarin which would antagonize 5 mg. of vitamin K per day to produce a prothrombin activity of approximately 30%.

## Results:

An analysis of all the data was followed by a second analysis, designated "corrected," in

\* Aquamephyton (R)  
\*\* Decholin (R)

TABLE I

The prothrombin time response to 5 mg. of warfarin per day and a regular diet compared to 5 mg. of warfarin per day and a fixed diet of 1800 Calories of Metrecal per day.

	Part I Regular Diet	Part II Fixed Diet of Metrecal	p values
Mean Prothrombin Time in % Activity .....	31.9%	29.1%	
(Corrected) .....	(31.4%)	(28.7%)	
Average Prothrombin Difference from the Mean .....	4.9%	3.1%	less than 0.02
(Corrected) .....	( 4.6%)	( 2.8%)	(less than 0.01)
Average Day to Day Prothrombin Variation .....	6.4%	3.5%	less than 0.02
(Corrected) .....	( 5.3%)	( 3.2%)	(less than 0.01)

TABLE II

The prothrombin time response to 5 mg. of warfarin per day and a regular diet compared to 15 mg. of warfarin per day, 5 mg. of vitamin K per day and a regular diet.

	Part I Regular Diet	Part IV - Warfarin And vitamin K Together with Regular Diet	p values
Mean Prothrombin Time in % Activity .....	31.9	22.5	
(Corrected) .....	(31.4)	(22.1)	
Average Prothrombin Difference from the Mean .....	4.9	5.1	Not significant
(Corrected) .....	( 4.6)	( 4.9)	Not significant
Average Day to Day Prothrombin Variation .....	6.4	5.3	Not significant
(Corrected) .....	( 5.3)	( 4.2)	Not significant

which those prothrombin determinations which are suspected to be in error are excluded. Those determinations which differed by 15% or more in the same direction from their preceding and following determinations were excluded as probable errors in the prothrombin test. One determination each in Parts I and II, and 2 determinations in Part IV were excluded in the "corrected" analysis, and each is designated with an asterisk in the respective Figures.

An arbitrary two week period of equilibration was allowed for each new regimen in Parts I, II and IV.

The fixed diet of Metrecal resulted in a relatively stable prothrombin response to 5 mg. of warfarin per day compared to the regular diet (Table I). The mean prothrombin time during the Metrecal diet was 29.1% which is in a comparable range of anticoagulation to the mean of 31.9% during the regular diet. The average difference from the mean of 3.1% during the fixed diet was significantly less than the 4.9% during the regular diet (p value less than 0.02). The average day to day variation\* of 3.5% per day during the fixed diet was significantly less than the 6.4% per day during the regular diet (p value less than 0.02).

The regimen of vitamin K and warfarin to-

gether with a regular diet did not result in a more stable prothrombin time response than that observed with a regular diet and warfarin alone (Table II). There was no significant difference in the average difference from the mean (5.1% compared to 4.9%) and no significant difference in the average day to day variation (5.3% compared to 6.4%). It should be noted that the level of anticoagulation during these two periods was not in the same range (22.5% prothrombin activity compared to 31.9%), and as a consequence, the results presented are not entirely comparable.

Figure No. 3 shows that neomycin by mouth for 3 weeks and a large dose of vitamin K by rectal intubation on two different days had no apparent effect on the established prothrombin response of 20% to 40% activity produced by 5 mg. of warfarin per day and a regular diet. Figure No. 5 shows that repeated large doses of vitamin K by rectal intubation in two additional test subjects had no apparent effect on the prothrombin response to a fixed dose of warfarin. In contrast, a small dose of 10 mg. of vitamin K *by mouth* in Case No. 2 produced a 20% increase in the prothrombin time in 24 hours.

The test subject remained in good health throughout this experiment aside from 3 or 4 minor respiratory infections and one episode of hematuria which occurred while a suitable dose of warfarin was being sought to antagonize

\*This calculation excluded the differences which occurred over each weekend, and excluded weeks 3, 4, and 5 in Part I in which tests were performed only 3 days per week.



5 mg. of vitamin K per day. Petechiae of the ankles were noted on 3 occasions without apparent cause. During one such occasion, the tourniquet test was negative and the platelet count 290,000 per cu. mm. A complete blood count, urinalysis and a panel of liver function tests (including a BSP determination) were all within normal limits at the beginning, at the mid point, and at the end of the experiment.

### Discussion:

This initial 90 day period of this anticoagulation study reveals a moderate degree of prothrombin time instability in response to a fixed daily dose of warfarin as was anticipated from clinical experience. The prothrombin time was observed to change an average of 6.4% activity per day. The cause of this unstable prothrombin time response to a fixed dose of anticoagulant is poorly understood although many explanations have been offered. Stephens (17), and Alexander and Wessler (18) have recently reviewed the multiple factors believed to influence long term anticoagulation stability. Stephens believes dietary variations and absorption variations of vitamin K to be important factors. Wessler concludes that variables inherent in individual patients are to a great extent responsible for the difficulty in maintaining the desired level of hypoprothrombinemia. Fremont (4) on the other hand cites the inherent characteristics of the anticoagulant used as the most important factor in avoiding "escapes" from anticoagulation and states that warfarin is superior to dicumarol in this regard. Nora (19) and Baer, et al (20) have written in support of the superiority of warfarin over dicumarol, but the experiments of Shapiro (3) and Rodman (21) indicate an equal variability of prothrombin response to these two drugs. Owren (22) believes that variations in intestinal absorption of the anticoagulant in use and diet variations are the most frequent reasons for unexpected changes in the level of anticoagulation. Finally, Mayer (23) has recently associated anticoagulation instability in 13% of the patients in his series with emotional lability and outbursts of acute anxiety.

It is believed to be of some significance that a relatively stable prothrombin time response was produced in this study by fixing the diet and the daily CAD dose. The average day to day difference in prothrombin activity during this period was limited to 3.6% per day which is only slightly

greater than the average 2.7% difference observed in 100 duplicate determinations performed on the same blood sample. These results suggest that dietary variations contribute importantly to the variations in prothrombin activity often encountered in long term anticoagulation therapy. These results also suggest that endogenous supplies of vitamin K from bacterial synthesis do not independently meet human needs. An alternate conclusion, however, might be considered that the fixed daily diet in this experiment provided a fixed substrate from which enteric bacteria synthesized a constant amount of vitamin K.

Fixing the daily diet is not a practical method to obtain a stable prothrombin response in long term anticoagulation therapy. In 1956, Babson (24) suggested that variations in response to dicumarol therapy are perhaps due to daily variations in dietary vitamin K. He proposed to give relatively large doses of vitamin K along with necessarily increased doses of dicumarol to render dietary variations of vitamin K negligible. Stephens (17) carried 10 of his patients on dicumarol plus oral vitamin K for 2 years and reported a remarkable stability of prothrombin response in this small group. The results of the single experiment herein reported do not support Babson's hypothesis and Stephen's clinical experience. There are many unknown factors in operation when relatively large doses of vitamin K and warfarin are taken together by mouth. Large doses of these chemicals taken over an extended period may not act in the same antagonistic fashion known to exist between smaller doses when taken over a short period. The total quantity of vitamin K absorbed and metabolized by human beings each day is unknown. It can be estimated from one source (25) that the vitamin K content of the diet is in the neighborhood of 1 mg. per day, or less. Whether additional vitamin K is available to man from bacterial synthesis in the gut is unknown. Possibly the 5 mg. daily dose of vitamin K ingested by the test subject in this experiment was not sufficiently large to render negligible the day to day variations in available vitamin K. This possibility becomes more distinct when it is appreciated that vitamin K is fat soluble and probably incompletely absorbed when administered by mouth. Michael (26) has recently reported that 85% of  $C_{14}$  labelled vitamin K given to rats by gastric intubation could be recovered

## Original Articles

in the stool. It is possible that only small and variable amounts of the fixed oral dose of vitamin K were absorbed each day by the test subject in this experiment. In contrast to vitamin K, warfarin is water soluble and believed to be almost 100% absorbed from the intestinal tract. These considerations suggest a future investigation. Possibly the administration of a sizable dose of a water soluble vitamin K analogue such as menadione sodium bisulfite\* by mouth, or a sizable *parenteral* dose of natural vitamin K, along with a fixed dose of warfarin by mouth each day would produce a relatively stable prothrombin time response.

### Summary:

In an eleven month anticoagulation study utilizing one healthy subject, the prothrombin time response to a fixed daily dose of warfarin and a regular diet showed a relatively unstable pattern with a day to day average variation of 6.4% prothrombin activity. By comparison, the prothrombin time response to the same daily dose of warfarin and a fixed daily diet of Metre-  
\*Hykinone (R)

cal showed a relatively stable pattern with a day to day average variation of 3.5% prothrombin activity. These results suggest that dietary variations may contribute importantly to the instability of long term anticoagulation therapy in certain patients.

A practical technique was investigated to obtain a relatively stable prothrombin time response by the administration of a fixed dose of vitamin K and warfarin together each day. This technique did not produce a more stable prothrombin time response than that observed with a fixed daily dose of warfarin alone. An average day to day variation of 5.3% prothrombin activity was the result during this regimen of vitamin K and warfarin together.

Repeated administrations of large doses of neomycin by mouth and vitamin K by rectum had no apparent influence on the established prothrombin time response to a fixed daily dose of warfarin. These observations suggest that vitamin K may not be absorbed in the lower intestines of human beings at the site of endogenous production.

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# Geriatric Ophthalmic Surgery

by

John Chenault Long, M.D.

A clear and concise appraisal of cataract surgery in elderly individuals is presented. For the general practitioner or the physician who does not do eye surgery, it may answer many questions that patients may ask of you regarding cataract surgery.

Of interest is the fact that while there have been improvements in cataract surgery in elderly individuals, the use of Alpha Chymotrypsin is not a drug to be used routinely in most cases. This drug does have some disadvantages and should be reserved for the younger, more difficult cataract extractions. The use of local anesthesia and early ambulation have greatly reduced the morbidity of many ophthalmic surgical procedures in elderly patients.

THE removal of the senile cataract is the most important operation of geriatric ophthalmic surgery. It has been said that everyone will develop cataract if he lives long enough. Certainly some trace of cataract may be universally found in people past sixty-five. Fortunately, only a relatively few develop opacities to a degree causing important disability.

There have been progressive improvements in cataract extraction technique. Very complete anesthesia and akinesia may be produced by present anesthetics with little fear of toxic reactions. Lidocaine hydrochloride (xylocaine) with or without hyaluronidase, seems the most popular agent at present. Most, but by no means all, surgeons reserve general anesthesia for special cases. The operation is a brief one, so the

hazard of anesthesia is minimal. Pre and post-operative sedation is used sparingly to reduce the likelihood of confusional states. Even the local use of atropine must be handled with care, as some elderly patients develop a toxic psychosis from this drug.

Better closure of the cataract wound by suturing has been made possible by the introduction of extremely sharp and delicate needles. The profession is indebted to the Swiss firm of Grieshaber for having first produced these superior needles. At present a number of other firms manufacture a highly satisfactory product.

The introduction of enzymatic zonulolysis with alpha chymotrypsin by Barraquer has simplified intracapsular extraction in the younger age group. This enzyme, when injected into the posterior chamber, partially dissolves the suspensory ligament of the lens, making it possible to deliver the lens within its capsule with less force. I

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227 Sixteenth Street, Denver 2, Colorado.

## Original Articles

doubt if its routine use is justified in patients much past fifty as, thanks to the increasing brittleness of the zonule, it is usually possible to satisfactorily extract these lenses without the enzyme.

In special cases of cataract complicated by glaucoma, the preoperative use of carbonic anhydrase inhibitors such as acetazolamide (diamox) or the intravenous use of urea or mannitol may prevent vitreous prolapse or expulsive hemorrhage.

These various factors combine to make cataract surgery much safer than formerly and to insure a good result in a very high percentage of cases. Especially has it made possible the surgery on old and frail people with little likelihood of causing them general harm. Tight suturing of the wound allows early ambulation. We routinely have our cataract patients walking around within twelve hours of the surgery and they usually go home on the third or fourth post operative day. Post operative care goes on in the office for weeks, but hospital confinement is quite brief.

The combination of local anesthesia and early ambulation makes it possible to operate successfully upon almost any old person regardless of his general physical condition. I do not mean that diabetes, hypertension, asthma, cardiac disease and many other factors should not be considered, but that they rarely constitute a contraindication nor interfere with a good result. Even senile dementia is not a strict contraindication, as many such patients are stimulated by the improved vision and become happier, more alert, and more easily cared for.

Unfortunately, many elderly cataract patients have other ocular problems that prevent a perfect visual result even after good cataract surgery. Senile macular degeneration, diabetic and hypertensive retinopathy are common. It is often worthwhile, however, to remove a cataract even though the existence of these other lesions is known or suspected.

The prime indication for cataract extraction is the visual need of the patient. Present technique permits the removal of a cataractous lens at any stage of development. The old custom of waiting for a cataract to mature is not only no longer necessary but is really quite undesirable. The degree of development at which cataract surgery is done is a matter of individual

consideration. A physician, dentist or draftsman may find surgery necessary when the vision is reduced to 20/40 or so, while an elderly housewife may be content to watch television with 20/70 vision. The shock and confusion experienced in adjusting to aphakic vision is of importance and must be considered in recommending cataract surgery.

In general, cataract surgery may be done on practically any patient when the need arises. Advanced age and poor general physical condition need not necessarily be a contraindication. The results are usually good.

Glaucoma becomes increasingly important with advancing age. Every patient past forty visiting an ophthalmologist should have a tonometric measurement. We have found it expedient to train our nurses to do this. Not only do they do it quite accurately, but we find that many more tests are done than when we did them all ourselves.

I will mention only one type of geriatric glaucoma, that associated with intumescent or hypermature cataract. Frequently an elderly patient, if he sees with one eye, will be content and will decline surgery on the cataractous eye. This is often a wise decision, but sometimes such a cataract will progress to a state of hypermaturity and give rise to an acute glaucoma. Happily, prompt cataract extraction not only cures the glaucoma but also restores the vision of the eye. Postponement of surgery under these circumstances not only results in unnecessary pain but also in destruction of the eye. This type of glaucoma is fairly common and one should be aware of its possibility in geriatric practice.

Retinal detachment becomes increasingly frequent with advancing age. This condition is a major calamity and requires prompt and energetic surgical treatment. Unfortunately, retinal detachment eventually becomes bilateral in about one-third of the cases. For this reason, one should rarely council against surgery because of the patient's age. The patient will be still older when the other retina detaches.

While the surgical treatment of retinal detachment remains a formidable procedure, it can usually be done safely with a good expectation of visual salvage. Local anesthesia, scleral resection, silicone implants, etc. contribute to safety and early ambulation in these old people.





# The Geriatric Amputee

by

Robert G. Thompson, M.D.

Dr. Robert G. Thompson has covered the field of geriatric amputee in a most complete manner. With the increase in the number, as well as the age, of these patients, there is an increase in amputations due to vascular disease problems in this group of people. The method of selecting the site for amputation in the geriatric patient with a vascular disease is outlined. The need for exercise to maintain strength and prevent deformities of the adjacent joints is stressed. Though the use of a prosthesis may be contraindicated in some elderly patients, the type of prosthesis and the careful review for the need of a prosthesis are outlined.

AT the National Research Council conference on the "Geriatric Amputee," held in April, 1961, in Washington, D.C.; after much discussion, the arbitrary age of fifty-five was selected as the age at which an amputee becomes a geriatric problem. It is, of course, well known that people age both chronologically and biologically, and a person at sixty years might be biologically younger than a person who is age fifty, or a person who is age seventy might be considerably younger than another who is sixty. However, the age of fifty-five is considered to be the age at which amputees present problems which are usually associated with the aging process. The number of people in this age bracket is increasing. In the United States today there are estimated to be between eleven and twelve million persons who are over the age of sixty-five. It is also estimated that people in the age bracket of forty-five to sixty-five years of age have increased from fourteen percent of the population in 1900, to about twenty-two percent of the population in 1962. The average life expectancy

in the United States is seventy years for males and seventy-one years for females. Thus, there are a greater number of people in the older age brackets, some of whom may become amputees. It is further noted that although we are living longer, it is not necessarily true that we are in better physical condition than fifty years ago. The older aged person today has, in the average, had relatively soft living conditions for the past twenty or thirty years; people in general have a great deal more fat content in their bodies. The automobile has lessened the need for walking or self-transportation and consequently, our lower extremity muscle tone and strength is considerably less than it might have been a number of years ago. In addition, because people are living longer, the degenerative diseases are producing more disability in our senior citizens.

In a series of 1,450 older aged amputees, who were studied in the National Research Council conference in 1961, it was noted that approximately seventy-one percent of this group had lost their limbs because of a vascular disease problem.<sup>(1)</sup> In this same group, only two percent had lost their limbs from tumor; 6.6% were

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from infection; 13.6% from trauma and 6.8% from other various etiologies. It thus appears that circulation is one of the greatest problems of the geriatric amputee. It is also well known that arteriosclerosis is a bilateral situation in most patients, thus when one leg is lost because of a vascular problem, one might expect that the chance of losing the opposite leg is considerably greater than in a person who does not have vascular disease. However, in this large group of 1,450 cases, it was revealed that only 16.2% were bilateral amputees. It is reasonable to assume that we are faced in most instances, therefore, with a unilateral amputee who might have or has vascular disease affecting not only the arteries of the extremities but the arteries of his heart, his lung tissue, his muscle tissue, his brain tissue, his kidneys and his liver. Deficient circulation in the cerebrum is usually associated with mental quirks, paranoiac reactions, slowed reflex reactions, poor vision, poor hearing and poor equilibrium. All of these can or may be complicating factors to rehabilitation of a patient with above-knee amputation. Arteriosclerosis with the limitation of blood flow to skeletal muscles produces musculature weakness in the opposite leg, a limited reserve action and often the symptoms of intermittent claudication. Again, because of poor blood supply, there is inadequate replacement of tissue loss and/or wear and tear changes which cause skin and connective tissue breakdown with ulceration, slow or no healing. The geriatric patient likewise may be suffering from degenerative arthritis in the opposite knee or hip joint, which also may limit the rehabilitation goal.

When the surgeon is presented with a patient who has vascular disease of both lower extremities, with gangrene involving the toes on one side, the level of amputation is oftentimes too lightly considered to be that of an above-knee amputation. However, it has been shown by Pedersen and Day(2) that where only a toe is involved with gangrene, where the foot is still warm, the patient has no pain at rest, and where there is no infection present; that very often a mid-metatarsal amputation will provide a healed foot stump on which the patient requires only the most limited type of prosthetic replacement. Where the gangrene is more extensive, there is absence of the popliteal pulse but a palpable femoral pulse; adequate skin

nutrition below the knee, a below-knee amputation oftentimes will survive. In a series of one hundred and seventy-seven amputees surveyed at the Rehabilitation Institute of Chicago, sixty-seven of this group presented below-knee amputations. There is no question but that the preservation of the knee joint is a great aid in rehabilitation of the amputee. In patients with no palpable femoral pulse, and the skin nutrition below the knee is inadequate to properly heal a below-knee amputation, then the above-knee amputation is certainly the level of choice. It is further true that the longer the above-knee amputation, the better control the patient will have of his prosthesis. The supracondylar amputation level is therefore encouraged in the geriatric group. This is *not* a level of choice, however, where the suction socket method of suspension might be indicated.

Following the amputation procedure, whether it is a below-knee or above-knee, rapid total rehabilitation efforts should be made to maintain normal strength in the upper extremities and the unaffected leg. Shrinkage of the stump (under medical supervision) should be carried out to provide a stump that will be ready for early prosthetic fitting. In the uncomplicated amputation, the stump on the average should be ready for prosthetic fitting in about eight weeks. Active exercise of the patient's unaffected extremity, and the amputated extremity should be *insisted* upon. All too often in rehabilitation amputee clinics, patients are seen who have abduction or flexion contractures at the hip, or knee flexion contractures in the below-knee amputated extremity. These contractures can be definitely avoided and prevented by proper exercises beginning within the second or third post-surgical day. The patient should be encouraged to bring his thighs together, should be encouraged to turn on his abdomen, and extend his thigh. The use of pillows under amputation stumps should be discouraged because these lead to pernicious habits of hip and knee flexion. Prolonged sitting in wheel chairs is also to be avoided because of the danger of flexion contractures of both hip and knee. The shrinking bandage and the exercise program should be definitely under the control of the surgeon and persisted in right up to the time the patient is ready for his prosthesis.

Each healed geriatric amputee should be ex-



amined with a definite hope of providing prosthetic restoration of his missing part. At this point, the question of the use of temporary pylon comes into the picture. The only real advantage to the use of a pylon is in the patient in whom the *eventual* fitting of a prosthesis is highly questionable. A temporary pylon can then be used to decide whether or not the patient will be able to stand and/or balance sufficiently well to eventually use a prosthesis. The patient with a healed amputation stump, who has adequate balance ability, adequate musculature strength, can stand between parallel bars on his unaffected leg, should early have a definitive, finished, articulated prosthesis provided. The only absolute contraindications to fitting a lower extremity prosthesis are (1) in a patient who has absolutely no desire to be fitted with a prosthesis. These patients will not do well when a prosthesis is forced on them. A second (2) contraindication is a patient who has impending or actual gangrene of the other leg. In all probability he will be a bilateral amputee and the fitting of a standard length prosthesis to a bilateral amputee in the geriatric age group is usually not the first step in rehabilitation. (3) Any patient who has such severe cardiovascular disease that even sitting in a chair is not tolerated will, of course, not use a prosthesis to any degree sufficient to warrant going through the fitting process. (4) The patient who has multiple handicaps such as a triple amputee, a patient with a severe neurological disorder (severe residuals of a cerebrovascular accident), is also a usual contraindication to the fitting of a prosthesis. Of course, during the time of evaluation of a geriatric amputee, both post-surgical and in the rehabilitation amputee clinic setting, the eventual goal or outlook of this patient should always be kept in mind. Some patients may be provided and trained with a prosthesis so that they can return to a remunerative vocation. There is no question, of course, as to the fitting of a prosthesis to a patient of this type. However, a patient who is home-bound can effectively use a prosthesis in his activities of daily living. It is a great deal easier to get about a house with a prosthesis on, than in a wheel chair. This patient certainly deserves a prosthesis. The patient who is so handicapped that the wheel chair is the only possible method of locomotion, may wish a prosthesis for cosmetic appearance and in some cases as a morale

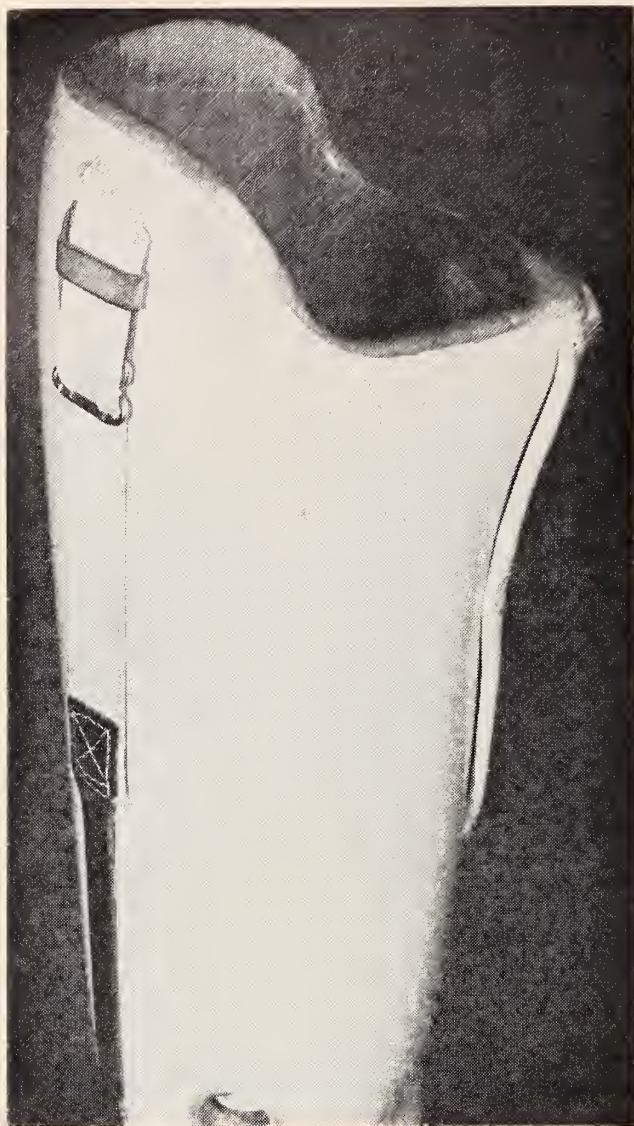


Figure 1  
Berkeley Socket Prosthesis with Pelvic Belt Suspension.

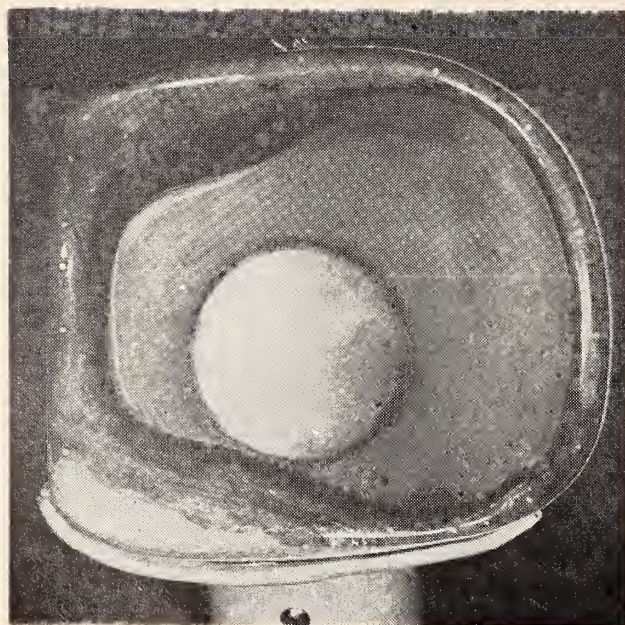
builder. And so a prosthesis may be indicated even in the patient to whom a wheel chair is home. These goals obviously are not those that we seek in the average adult amputee. However, we feel that these patients do deserve the full rehabilitation effort even though they are wheel chair or home-bound in their activities.

The geriatric amputee has definite indications and contraindications for the type of prosthesis which is provided for him. In a young above-knee amputee, the use of suction suspension will provide him with a prosthesis suspension method that is superior to the pelvic belt or shoulder suspender harness. The geriatric amputee with his limited cardiovascular reserve and usually limited muscular strength, finds that applying a suction socket prosthesis is a major chore and most often a problem that cannot be surmounted alone. For this reason, namely the difficulty of putting on the prosthesis, the suction socket suspension type prosthesis is usually *contraindicated* in the geriatric amputee. It is much simpler to pull on an above-knee prosthesis over a stump sock, buckle the pelvic





**Figure 2A**  
Berkeley Quadrilateral Socket.  
(Note high anterior & lateral walls)



**Figure 2B**  
Top View of Berkeley Quadrilateral Socket.  
Note posterior medial prominence (Ischial seat)

belt (Figure 1), and be on his way, than it is for the amputee to struggle into a suction socket prosthesis. Many geriatric amputees do well with the Berkeley shaped quadrilateral socket which has been in standard use for above-knee amputees for the past five or six years (Figure 2, A and B). However, some geriatric patients will find during prolonged sitting, that the high anterior brim of the Berkeley socket causes irritation to the anterior groin area. Accordingly, the Berkeley socket may have to be modified somewhat to provide more comfort in sitting. However, the ischial seat support in the quadrilateral socket is very definitely to be sought in the geriatric amputee, as it is in the young adult amputee.

The essential requirement of a knee mechanism in the geriatric patient is that it be stable at heel strike. When the patient swings his leg forward to the initial stance phase of a step, the knee *must not* buckle under him when he transfers his weight to his prosthetic leg. For the patient who has a long stump and good control of the prosthesis, simply placing a simple constant friction knee joint posterior to the line drawn from the trochanter through the knee to the ankle, will usually give adequate built-in stability to his prosthesis. However, the patient with the short stump, who has weak musculature may benefit from the use of a friction type breaking mechanism, built into the prosthesis. A few patients who require excessive knee stability may require a knee lock built into the prosthesis to lock when they are standing and walking. However, whenever possible, motion of the knee of the prosthesis should be utilized.

The below-knee amputee in the geriatric group can, in many cases, be provided with a total contact patellar bearing type of prosthesis, with the use of a condylar strap (Figure 3). This is a light prosthesis and when properly aligned, the patient walks very well. In the diabetic amputee or the group of patients with poor nutrition below the knee area, the increased skin and stump pressure that one needs to absorb in this new prosthesis, will sometimes dictate further support, namely the use of a thigh corset and knee hinges. In some patients who have very *inadequate* skin reserve or ulceration, the use of an ischial weight bearing thigh corset may be indicated. The Syme's amputation level is not frequently carried out in the geriatric amputee,



however, when a patient is successfully amputated at the Syme's level, the new Canadian type Syme's amputation prosthesis ordinarily can be used quite successfully. A few amputees may complain about the rigidity and firmness of the socket, and some will then have to be fitted with the older style, double upright Syme's prosthesis with the leather laced socket.

In summary then, the geriatric amputee has to be approached with a great deal more respect for lessened tissue tolerance (to pressure) both in his stump and in his remaining leg. In addition, general medical reasons may occasionally contraindicate the use of a prosthesis (the presence of heart disease, poorly controlled diabetes or impending loss of the opposite leg). However, all geriatric patients should be evaluated for a possible prosthesis. Finally, the rehabilitation goals in the geriatric amputee may have to be modified in view of associated disease or disability.

**Figure 3**

**Patellar Tendon Bearing Prosthesis with Condylar Strap Suspension.**



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## COINCIDENCE VS. EVIDENCE IN DRUG EVALUATION

Just what these new (FDA) regulations will do to the introduction of new remedies will not be apparent for some time. A reasonable guess is that fewer new drugs will be introduced and the prices of drugs will be higher because of the new costs added to the testing. The difficulty of separating coincidence from evidence is seldom appreciated. Common symptoms such as thrombophlebitis, skin reactions and headaches may be coincidental with the administration of various remedies. Intensive investigation may be necessary to separate the coincidence from the incidence. — Morris Fishbein, M.D., in *Postgraduate Medicine*, June 1963.

# The Appraisal of Gastroscopic Biopsy and Critique of Hemochromatosis

by

Martin S. Kleckner, Jr., M.D.

Gastroscopic biopsy of the gastric mucosa to demonstrate iron deposition within the chief cells is suggested as a preliminary diagnostic procedure in cases of hemochromatosis. Although liver biopsy is probably more dependable, gastroscopy provides another avenue of approach.

IT IS WELL known that in some cases of hemochromatosis gastroscopic visualization reveals reddish-brown pigmentation of the gastric mucosa. Frequently, gastroscopic biopsy stained with Berlin or Prussian blue histologically exposes hemosiderin or iron in the chief cells of the patient with hemochromatosis. In separate investigations of the significant pathological differences of primary and secondary hemochromatosis and transfusional hemosiderosis, iron was observed in the stomach in 73 per cent of either primary or secondary hemochromatosis and in 10 per cent of transfusional hemosiderosis.(1,2,3) Althausen and his co-workers suggest that a rough correlation exists between the intensity of the iron pigmentation in the liver and in gastric mucosa.(4) Our findings agree with their experience, nor was there observed any significant aberration in the basic gastric secretion nor volume of free hydrochloric acid.

Hemochromatosis is classified as one of the

iron-storage states, a specific disease with a primary (classical) or secondary type, the former acknowledged as occurring in generations or in families. The accumulation of excessive amounts of iron is a striking pathological and biochemical finding. Investigational data of radioisotope intestinal absorption demonstrate large amounts and retention of Fe(59) in hemochromatosis, as much and even more than in chronic iron deficiency, polycythemia vera, pernicious anemia in remission or acute viral or toxic hepatitis. Iron is stored primarily in the reticulo-endothelial system of the body, and if the amount of this metal is retained quantitatively, the liver, pancreas, heart, endocrine glands and gastric portion of the alimentary canal are specific sites of deposits. Naturally, then needle biopsy of the liver or gastroscopic biopsy are diagnostic methods of hemochromatosis. The liver of hemochromatosis contains from 25 to 100 times the normal amount of iron, the pancreas from 22 to 50 times, the heart from 10 to 80 times and the stomach from 20 to 45 times the normal

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amount of iron.(1,3,5,6) In order to differentiate histologically hemochromatosis from hemosiderosis, certain criteria were employed, as follows, but with an understanding that in medical science there are and always will be the exception. Cirrhosis (nodular regeneration as the *sine qua non*) is always present in hemochromatosis and absent in hemosiderosis (Figure 1). Iron is always present in the hepatic cells and Kupffer's cells of the liver in both conditions; it is usually present in the bile ducts and hepatic stroma of hemochromatosis, whereas iron is often present in the bile ducts of hemosiderosis (Figure 2). Iron is usually present in the gastric glands, the chief instead of the parietal, and often present in hemosiderosis. These broad statements are the pathological findings originally of 42 patients with hemochromatosis and 20 cases of transfusional hemosiderosis. At the present time we have and are continuing investigation of 84 cases of primary hemochromatosis and 7 cases of secondary hemochromatosis.

Three separate families were investigated with primary hereditary-familial hemochromatosis. This gave us an opportunity to compare the diagnostic value of needle biopsy of the liver and gastroscopic biopsy in hemochromatosis. Table 1 discloses that iron is always found in the liver in hemochromatosis but not necessarily in the stomach. These families of primary or classical hemochromatosis occurred in men, especially in the fifth or sixth decade of life, with hepatosplenomegaly, diabetes mellitus, cutaneous melanosis, sexual hypoplasia or various combinations of these manifestations or clinical findings. Patients with this condition may have sudden or slow development of the clinical manifestations of this disease.

Table I also reveals that hemochromatosis might be clinically active, pathologically more advanced, but that cirrhosis, even in an early stage of development, is or should be an invariable pathological finding together with the aforementioned excessive sites of iron-stores. We have noted that approximately half of our series of primary hemochromatosis have alcoholism. Also, both of these conditions have an increased incidence of duodenal or gastric ulcers. Alcoholism, hepatitis, pancreatitis, protein malnutrition and also hepatotoxic agents are recognized as cirrhotogenic. Parenchymatous iron, on the other hand, is only a hypothetical cause of cirrhosis

PRIMARY HEREDITO-FAMILIAL HEMOCHROMATOSIS			
	(B. FAMILY)	FEB. 1962	
	♂ 59	♂ 50	♂ 54
CIRRHOSIS	+	-	-
IRON IN LIVER	+	+	+
IRON IN STOMACH	+	-	+
DUODENAL ULCER	+	-	-
GASTRIC ULCER	-	+	-
ALCOHOLISM	+	-	+

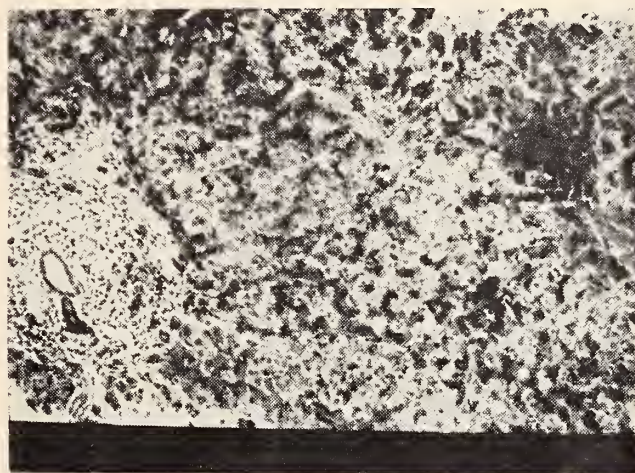


Figure 1. Transabdominal needle biopsy of the liver in primary, heredito-familial hemochromatosis, histological features of cirrhosis, broadened stroma and deposits of iron (hemosiderin) in hepatic cells, Kupffer's cells, stroma and epithelium of bile ducts (H & E counterstained with Prussian Blue X110).

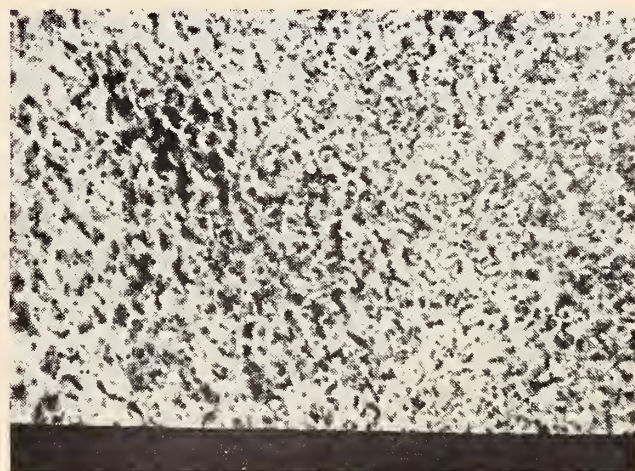


Figure 2. Same as Figure 1 except that this needle biopsy was transthoracic and that the liver in hemochromatosis was much less advanced histopathologically, demonstrating areas in which normal vascular relationships persist. The portal tracts illustrate increased fibrous connective tissue and stationary central vein. Very early garland-like regenerative nodules. (H & E counterstained with Prussian Blue X110).



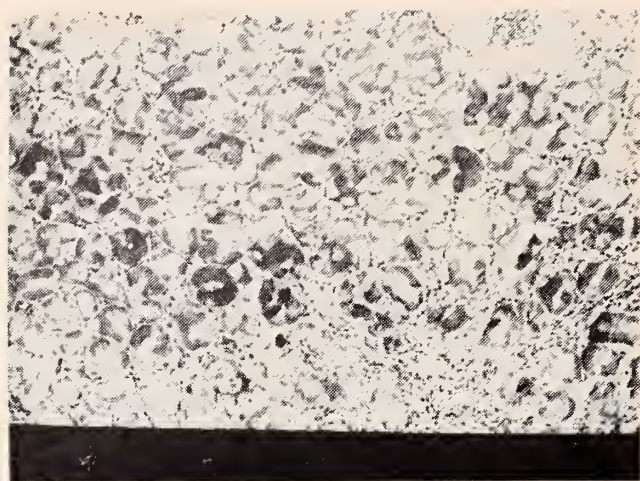


Figure 3. Gastroscopic Biopsy of patient with early, unadvanced hemochromatosis. Liver is Figure 2. Slight amount of iron in chief cells of the mucosa of stomach. No other structural abnormalities. (H & E counterstained with Prussian Blue X110).

even to date. Heredito-familial hyperferremia or increased intestinal absorption of iron and independent cirrhosis from any cause is an enticing etiologic postulation of hemochromatosis. Hemochromatosis is not a sex-link defect because 4 per cent of the primary type and 29 per cent of the secondary type occurs in females. It has been postulated that the genetic factors determining hemochromatosis are polymeric, not determined by a single autosomal gene, have a recessive pattern of inheritance; however, in our families of hemochromatosis the inheritance is more in keeping with a dominant form with incomplete penetrance.(7)

In the B family, investigation was brought up to February, 1962, it is noted as expected that the hepatic-profile studies, which include the more sensitive serum glutamic oxaloacetic and pyruvic transaminase, plasma cholinesterase, serum isocitric dehydrogenase in addition to the conventional liver hepatic function tests, were within reasonably normal limits. I gastroscoped the older patient with hemochromatosis who had chronic hypertrophic gastritis, in whom gastroscopic biopsy disclosed iron in the chief

cells in the glandular gastric mucosa associated with marked round cell infiltration. The gastroscopic visualization of this patient was dark red with the conventional landmarks of chronic hypertrophic gastritis.

Twelve patients with primary hemochromatosis have been gastroscopically biopsied and visualized. In 11 cases iron, to some degree, depending upon the extent of development both clinically and pathologically, was observed in the chief cells of the gastric glands from specimens obtained with the Benedict operating gastroscope (Figure 3). If the gastric tissue is not stained specifically for iron, the histological observation of hemosiderin may be lacking. The observer must not rely upon identification of pigment using the conventional hemotoxylin-eosin stain. Simultaneously, all of the 12 patients had needle biopsies of the liver which were pathognomonic of hemochromatosis.

The findings of this investigation disclose that hemochromatosis is diagnosed principally by needle biopsy of the liver, may be suggested by gastroscopic biopsy, and may be augmented by determinations of elevation of serum iron and saturation of the iron-binding globulin.(8) It is not to be unheeded that a thorough history, physical examination, family history, and review of systems of the body are mandatory for the clinician to contemplate hemochromatosis.

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*Washington's address to Officers of the Army, March 15, 1783*

"If men are to be precluded from offering their sentiments on a matter . . . reason is of no use to us; the freedom of speech may be taken away, and dumb and silent we may be led, like sheep to the slaughter."





Seymour J. Brockman, M.D.

# Problems of Tympanoplastic Surgery

by

Seymour J. Brockman, M.D.

**A lucid explanation of the recent advances in tympanic surgery and, more importantly, a review of the indications and of what may be expected from these procedures. A timely reminder that cure of chronic infection is also demanded of the surgeon. Finally, a review of the causes of failure is presented.**

LITTLE more than a decade ago the theories and techniques of modern tympanoplastic surgery were developed by Wullstein(1) and Zollner.(2) Then, as now, the two-fold aim of reconstructive middle ear surgery was 1) the total eradication of infection and reestablishment of a completely healthy middle ear, and 2) the preservation, maintenance, and/or restoration of hearing. To do this, however, the two frequently are in conflict because control of disease involves removal of tissue which may lead to further hearing loss.

This, then, is one of the problems of tympanoplasty — the human factor — for the objectivity of the otologist and the attitude and understanding of the patient are of primary importance if a result satisfactory to both surgeon and patient is to be achieved.

The patient often comes to the otologist for hearing rehabilitation rather than control of infection. In most instances, the surgical procedure he has heard of and asks for is stapes mobilization. Frequently, this patient has resigned himself to living with a chronic draining, suppurating ear without too much concern, unaware that he is still susceptible to potential secondary serious complications such as intracranial spread. Consequently, he experiences initial disappointment on learning that he is not a good candidate for stapes surgery. Because of his renewed in-

terest in the possibility of hearing again, however, he is more amenable to discussing phases of tympanoplastic surgery. It is important for the otologic surgeon to recognize this and to realize his responsibility to the patient to explain fully that the primary purpose of reconstructive temporal bone surgery is the total removal of the infection and that the restoration of hearing is a secondary aim. The otologist must maintain his objectivity, for tympanoplastic surgery is fraught with great technical difficulties, and poor results regarding restoration of hearing are frequent.

Since tympanoplasty is an evolutionary type of surgery, and one that will not remain static, the surgeon must maintain a constant awareness of new techniques and approaches used by others. He must not only be skilled in surgery of the temporal bone and its environs, but he must be well versed in the physiology and pathology of the temporal bone. He must be familiar with all the available equipment and instruments necessary to perform this procedure, and, as in all types of surgery, he must avail himself of opportunities to observe the actual surgery as performed by others. Also to be stressed is the importance of keeping up-to-date on current literature.

Wullstein's classification of tympanoplasty outlines five basic methods of converting the sound apparatus in the temporal bone to a working mechanism for conducting sound. However, all tympanoplastics do not fall neatly into one of these categories, and the findings at surgery sometimes necessitate a modification of one of

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From the Head and Neck Surgery Division, Otology Section, University of California, Los Angeles, and the Department of Otolaryngology, Cedars of Lebanon Hospital, Los Angeles, Calif.



## Original Articles

the five types or a combination of several of the types Wullstein has outlined. The surgeon must be prepared by extensive personal experience and previous observations to make these decisions at the time of surgery. He must also be prepared for disappointment with regard to hearing gain as compared to stapes mobilization, but in practically all cases he should be able to eliminate infection of the temporal bone.

The causes for failure of tympanoplastic surgery are varied, and only a careful analysis of each case can help in obtaining improvement of the results. Failure can be due to an inadequate appraisal of a patient's suitability for tympanoplastic surgery or a failure in technique. We have found that the failures can be categorized in two groups: 1) those patients who were not candidates for tympanoplastic surgery due to one or more pre-existing conditions, and 2) those patients who were candidates but failed to reach predicted neural level or who experienced even further hearing loss.

In the first category, let us examine and briefly discuss those conditions which preclude tympanoplastic surgery — the contraindications:

1. *Severe Sensorineural Hearing Loss.* If a patient has a severe neural loss secondary to his infection, no surgical procedure at the present time will succeed in bringing his level of hearing to normal threshold. Occasionally a patient will have a moderately severe neural loss combined with a moderate conductive loss. If the operation is successful, his hearing may be brought up to the neural level, which will still be below normal hearing. This must be explained to the patient.

2. *Diffuse Cholesteatosis.* This condition exists primarily in children. It may be described as a diffuse, squamous epithelial invasion of the entire cellular structure of the temporal bone. In spite of the benefit of the microscope as a surgical aid, the most competent otologic surgeon is often unable to be certain that all cholesteatoma has been eradicated. Rather than bury potential cholesteatoma and infection under the graft of a tympanoplasty, I feel that the most extensive radical mastoidectomy possible should be performed. After a suitable period of time, a secondary tympanoplastic procedure may be performed.

3. *Invasive Tympanosclerosis.* This condition is characterized by deposits of large masses of hyalinized material in the submucosal layers of

the tympanic cavity and mastoid in which the ossicles are usually embedded. While attempts to remove localized areas may seem successful and results of tympanoplasty are occasionally successful, in one case in my experience the process eventually involved the graft as well as diffuse extension into the middle ear. Covering the middle ear and/or mastoid is, in essence, the same as covering a case of diffuse cholesteatosis.

4. *Specific Bacteriologic Problems.* Certain bacterial infections which are resistant to antibiotics will persist in suppurating in spite of radical surgery to the temporal bone. Not all of the cells of the temporal bone can be enterated, and covering up infection will only result in the loss of the graft as a minor consequence, with probable intracranial complications as a major consequence, particularly in chronic cases of *Proteus vulgaris*, *Pseudomonas* and *Mycobacterium Tuberculosis*.

5. *Atrophic or Deficient Mucosa of the Middle Ear.* This applies to the patient with an adhesive thin drum plastered to the promontory which, at separation, reveals bare bone over most of the middle ear. Attempts at reconstructing a cavum minor with mucosal implants such as buccal mucosa, sinus linings, and veins or plastic material have not been successful.

6. *Closed Eustachian Tube.* This condition cannot always be determined prior to surgery. The factors of allergy, sinusitis, nasal obstruction, endocrine status, anatomical abnormalities, local infection and polypoid changes about the intratympanic orifice and/or pharyngeal orifice must first be evaluated. Attempts to correct these conditions, when present, must be made prior to surgical intervention. When it is impossible to improve tubal function, then a successful procedure is unlikely.

7. *Presence of Acute Infection.* If acute exacerbations of chronic ear disease or acute infection per se (acute otitis or mastoiditis) require extensive temporal bone surgery, such operations should take precedent over any tympanoplastic surgery. If tympanoplasty is still indicated following complete recovery, it may be performed as a secondary operation.

In the second category, I should like to list and discuss the primary causes of failure in those patients who were considered good candidates for tympanoplasty:

1. *Split-Thickness Grafts.* In these cases the



graft gradually sloughed in part and the exposed area gradually enlarged to lay bare the middle ear. Though the initial results in improved hearing had been excellent, the hearing later deteriorated and necessitated revision with a perichondral graft. Problems with full-thickness grafts are encountered where the graft has a tendency to de-epithelialize and slough its outer layer. The hearing result may be satisfactory, but the cavity will remain wet and must be constantly cleansed and kept dry. This is disturbing and must be watched to avoid secondary infection. It should be noted here that although there is some difference of opinion among otologists as to the material to be used and technique to be employed in grafting, we have found that all skin grafts carry a high rate of slough.

2. *The Use of Polyethylene Struts.* Results in improvement in hearing in Type III tympanoplasty over Type IV tympanoplasty led us to the use of a polyethylene strut as a contact between a mobile footplate and the graft when the stapedial crura were necrotic or destroyed. Initially the results were most satisfactory, but in time the strut eroded through the graft. The eroded area enlarged, and suppuration made it necessary to remove both the strut and the graft. Type IV tympanoplasty was then performed but was not as successful as it might have been as a primary procedure.

3. *Manipulation of the Stapes and/or the Footplate.* In all instances we are dealing with an infected middle ear. The body has succeeded in building barriers against this infection. It is a temptation to try to manipulate a fixed stapes due to otosclerosis, tympanosclerosis or inflammation, to test phase relationship to the round window.

Manipulation which is too assiduous can result in opening the labyrinth and, as a lesser complication, may cause a serous or circumscribed labyrinthitis. A major complication is a total loss of hearing. In stapes surgery with no infection, the number of cases resulting in total deafness has increased with footplate manipulation. When infection is present, the chance of permanent damage is greatly increased.

4. *Atrophic Mucous Membrane of the Middle Ear.* Previously discussed.

5. *Recurrent Cholesteatosis.* Previously discussed.

6. *Tympanosclerosis.* Previously discussed.

7. *Infection of the Cavity.* The otologist must develop scrupulous techniques for the aftercare of the cavity. I prefer to do all my dressings in the office rather than the hospital. Patients are required to come to the office for postoperative care for a minimum of three weeks. This period is extended if the ear is not healed sufficiently at the end of that time. If secondary infection does develop, all steps must be taken to eliminate it entirely or the graft will slough in part or in toto.

The contraindications and problems causing failure previously discussed continue to be stumbling blocks; nevertheless, many factors once thought to be insurmountable are being eliminated due to modern surgical microscopy, perfection of illumination, magnification, and control of infection by antibiotics. In those areas which remain troublesome, it can be stated with conviction that great progress is being made in this relatively new art of tympanoplasty.

The literature of the past four years evidences the widespread interest in reconstructive ear surgery. It will continue to be an intriguing and provocative subject until the dream of temporal bone surgeons is realized.

### Summary

1. The otologist must maintain his objectivity and the patient must be well informed as to the primary and secondary objectives of tympanoplastic surgery.

2. The surgeon must be up-to-date on new procedures and techniques and must be thoroughly familiar with work done by others, both through personal observation and by a knowledge of the current literature.

3. Contraindications, both immediate and enduring, to tympanoplastic surgery are discussed.

4. Causes for failure in patients who were suitable candidates for tympanoplastic surgery, but who failed to achieve their predicted neural level, are discussed.

5. Problems once thought to be insurmountable are being conquered due to modern surgical microscopy and antibiotics, and great progress is being made in those areas which remain troublesome.

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# Arizona's History of Surgery

## Part 1

by

Audrey D. Stevens



Audrey D. Stevens

Those of you who have no interest ('tis sad for you) in Arizona frontier tales, stop here. Mrs. Stevens has collected a treasure of "medadotes." A refreshing project for a physician's wife — a bit off beat from "kountry klubbing" and "do gooding" so prevalent in opulent Arizona. For the aficionado, come listen as the author visits with some of your predecessors.

### Preface

I could really "talk up a storm" on the sheer joy I had in doing this paper.

At first I found it very difficult to convince people that I was actually serious about my research, but after this was accomplished it was fairly smooth sailing. The percentage of hospitals and doctors that answered my letters was not as good as I would have liked, but the ones that did answer were so interesting that I would practically walk the floor waiting for my husband to get home so I could share them with him.

In reading about the lives of these doctors who played such an integral part in Arizona History, I felt that I actually knew them as a friend, and in reading their obituaries I knew the sadness

that their patients must have felt at their passing.

These doctors and their wives lived quite differently than we do today. Some roads were so narrow and rough that the doctors had to go by horseback to wherever they were called. Most doctors worked alone, and consultations were few and far between. A doctor was truly alone with only his education, his intestinal fortitude and his God to guide him.

Along with his medical bag he usually carried a gun to protect himself from bandits or Indians. More than one doctor was killed by one or the other. To survive to the age of fifty-five, as did Dr. Goodfellow, took a constitution of iron.

Yes, I am really "hooked" — I doubt if I will ever pick up a newspaper and read an obituary concerning one of "our boys" and not wonder what interesting stories he could have told had he had the time to do so.

This begins a five-part series written by the wife of W. C. Stevens, M.D. of Kearny, Arizona.



### First Settlers in Arizona

PRIOR to 1846 Arizona was a part of Mexico. After the war with Mexico and due to the terms of the treaty of Guadalupe Hidalgo, the larger part of Arizona lying north of the Gila River became, together with the state of New Mexico, the Territory of New Mexico.

In 1853 the land south of the Gila River became part of Arizona through the Gadsen Purchase. Ten years later, in 1863, Arizona became an independent territory of the United States. In 1912 it became the forty-eighth state of the Union.

However, long before Arizona was a territory or a state, the first settlers, the Indians, had their own methods of curing ailments. The Apache "medicine men" specialized in their own cures. They were usually organized into societies and upon the type of ailment depended which "medicine man" was called. The Hopi and Navajo youths spent years living with and being trained by the older "medicine men." They had many chants to learn and much depended on the chants being said perfectly. The Navajo also used "sweat baths." All types of living quarters were used, such as their customary dwellings (teepees or earth mounds) which they protected with skins and covered with grass or blankets. They would make the dwelling as air tight as possible and used heated stones with water to make the steam(1). The Pima Indians always, upon the death of one of their members, burned their living quarters and moved to a new location(2).

An Apache by the name of Carlos Montezuma (Indian name Wassaja) was the first Indian to become a doctor of medicine. Dr. Montezuma was approximately six when left an orphan during one of the many wars between the Apache and Pima Indians. He was sold by three of his Pima Indian captors in Florence, Arizona to a photographer by the name of C. Gentile(3).

In 1884 Dr. Montezuma received his Bachelor of Science degree in Chemistry from Illinois University(4). In 1889 he graduated from Chicago Medical College. After a short time with the Indian Bureau in North Dakota(5) the Doctor went into what was to become a very successful private practice in Chicago, Illinois(6).

In 1922 he was ill with diabetes and tuberculosis and came to Phoenix to die among his own people(7). For a few days he stayed with friends

and then moved to Fort McDowell.(8).

Mr. George Webb in his book entitled "A Pima Remembers" states, "One of the boys told me that the doctor was there and very sick. He asked me if I would like to see him. I said I would like to see him very much.

He took me to a 'clas-ki' made of willow poles and brush covered with canvas. There was a passage way about four feet high, three feet wide and about three yards long. To get in, I had to get down on my hands and knees. There, on the dirt floor, was spread an expensive blanket on which the Doctor lay. To one side was a suitcase full of expensive clothes. The room was full of people. My visit was very brief as the Doctor was on his last stage of life.

A few days later he died."(9)

Arizona newspapers quite often had articles and even case histories of the doctors practicing in Arizona. One such item in the *Arizona Miner* reads, "Dr. Kendall succeeded in extracting bullet from under left false rib of Mexican wounded by Indian at Toll-Gate." Another — "Wounded in recent Indian attacks are at Ft. Whipple Hospital, J. J. Gibson, Wm. King and Thos. Bonnet."(10)

The newspapers didn't play favorites as they also reported case histories of the Indian medicine men. "Small pox got among the Indians on the other side of the river. The poor wretches have suffered terribly for want of food and clothing and presumably some deaths have occurred among them. For obvious reasons we have not investigated the matter closely. The Indian medicine men must have had a rough time of it. Each of them is allowed to have six patients die under his treatment, but when the seventh dies, the corpse's friends club the doctor to death. Last week, by permission of chief Pascual, a medicine man shot two babies, placing them so that one bullet killed both. They had small pox and were pronounced past the doctor's skill when he was called in. Therefore their deaths do not count on his limit of six. Nice people."(11)

"Small pox is still on the decrease here. Two of the doctors tell us they think there can not now be more than 15 cases. Pascual, chief of the Yumas, says there are now no cases among his tribe, all having got well that did not die. So few of the Indians have painted their faces black, that there could not have been many

## Original Articles

deaths among them. Black paint is their regulation mourning.”(12)

Arizona is noted for its history of skirmishes with the Indians. One such fight was at Big Dry Gulch, which is located in the heavy pine forest on the high summit of the Mogollon range. Lieutenant Morgan with Chaffee's troop was having unusual success at shooting Indians in ambush when in his excitement he over-exposed himself and got shot by an Indian. “The bullet struck a rib and slid under the skin lodging in the muscles of the back.” Dr. Charles B. Ewing (late Colonel) was the surgeon who removed the bullet. Lieutenant Morgan years later became Colonel Morgan.(13)

Another skirmish on the Mogallons took place one hundred miles from Camp Verde where Dr. Warren E. Day was camp doctor. The date was October 31, 1874. Captain King was shot between the left elbow and shoulder by an Indian lying in ambush. A messenger was sent to get Dr. Day and he left Camp Verde at 10:00 p.m. the night of November 1 with nine men as an escort. To quote Dr. Day's letter written in 1913, “I left Verde about ten o'clock the night of November 1 with an escort of cavalry and an ambulance with some led horses. I went to the head of Beaver Creek and camped. Left there early the next morning and got into a snow storm on the Mogollons. Reached Pine Springs the second night and snow was three or four feet deep. It was so cold the ambulance driver was badly frozen and I had to drive the ambulance myself. The animals were put into a corral that night. About four o'clock the next morning the men came and woke me and said the mules had all got out and wanted to know what to do. There was one horse that did not get away. I took that horse the next morning and with my instruments in my hands rode on to Captain King, a distance of twenty-two miles.

I found King lying in his blankets with a comminuted fracture of the left arm between the elbow and shoulder. Of course, under ordinary circumstances, it was an injury that would have required amputation. Before I got off my horse and could get to work, King held up his right arm and said, ‘This is all right, if you want to take that (pointing to his left arm) off you will have to take my good arm off first.’ ”

During the Spanish American War Captain King was promoted to Brigadier General, and

his comments in 1928 regarding Dr. Day's work were, “He smashed an old cigar box and made splints of it, bandaged the arm carefully and nursed and cared for me till I was fully recovered.” Surgeons of the regular army, notably Dr. McKee, Chief Surgeon of the Department of San Francisco and Dr. Lippincott, Chief Surgeon at Prescott both told me afterwards that no one could possibly have handled the case more skillfully than did the little doctor from Camp Verde.”

It was eight or nine years before the arm finally healed. Fragments of bone were exuding all those years and the wound led to Brigadier General King's retirement.(14)

I wrote to Dr. Clara S. Webster, a member of the “Fifty Year Club,” to ask her if she knew who was the first woman doctor of Arizona. She wrote back that she did not know, but added a very cute and true story about “our first settlers” that Dr. Mary Neff told her.

“Dr. Neff was practicing in Phoenix early in the present century when she was hurriedly called to attend an Indian woman in childbirth. Twins were born; and immediately the Indian husband jumped up with a hatchet in hand, held it over the wife's head and threatened to kill her instantly unless she revealed who the ‘other man’ was. Dr. Neff assured him that the birth of twins was by no means a rarity! He angrily retorted that inasmuch as the doctor was a woman she would naturally side with the wife and he refused to believe her. Finally Dr. Neff proposed that they call in a man with the title of Judge and have him settle the dispute. His decision was accepted and the wife was cleared of any suspicion.”(15)

In 1930 the first school of nursing for Indian girls was established by Dr. Clarence G. Salisbury. His letter was so interesting that I decided to share it with you readers. “The Sage Memorial Hospital School of Nursing was started in September, 1930. Governor Moeur, John G. Hunter, Agency Superintendent and Red Point one of the most famous old medicine men of his day were the commencement speakers.

Later representatives of nearly fifty tribes and a number of girls from other minority groups were enrolled. There was a hard and fast rule that we would not accept anglo white girls as they had plenty of opportunity to enroll in the city hospitals.



We graduated a total of two hundred. There were several Eskimos, a Phillipino, several Chinese and Japanese and several Cubans.

Fifty percent of the graduates at the time of the war were in Service all over the world. We participated in the Nurses Cadet program. Two of the Cadet Nurses launched one of the victory ships at Los Angeles. The first Navajo girl to graduate was the daughter of a medicine man. She was my surgical supervisor for six years. She entered the Army Nurses Corps during the war and became a Captain.”(16)

FOOTNOTES

Chapter I

1. “This Is Arizona,” A supplement to “Arizona Days and Ways” published by *Arizona Republic*, (page 303).  
2. George Webb, “A Pima Remembers,” (page 38).  
3. Oren Arnold, “Savage Son,” (page 60).  
4. *Ibid.*, (page 178).  
5. *Ibid.*, (page 184).  
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8. Anna A. Shaw, *Phoenix Gazette*, June 1958, (no page).  
9. George Webb, *op. cit.*, (page 31).  
10. *Arizona Miner*, Nov. 7, 1868, 2:3.  
11. *Arizona Sentinel*, Feb. 16, 1878, Vol. 6, No. 45, Col. 2, (page 3).  
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*Part II will appear in Vol. 21, No. 3*

WHICH ONE WILL IT BE?

“Physicians can be classified under the following three categories: 1. ‘Jaw bones’ — those who talk, talk, talk, but never act; 2. ‘Wish bones’ — those who are wishing that someone would do something about the situation (but not themselves); 3. ‘Back bones’ — those who do not only talk, but act, take an interest and do whatever job is required.”

ADMINISTRATIVE WOES OF NEW DRUG LAW

Nearly all (pharmaceutical) companies report that their costs have risen. Most of the additional expense is in the areas of research, packaging, labeling, advertising, and in meeting foreign competition. One company estimates an increase of seven per cent in research costs, due exclusively to additional paperwork. Another states it will have to destroy \$85,000 in non-complying packaging materials despite every effort to anticipate the regulations and minimize losses. Still another company had to reprint inserts for and repackage 450,000 items already in inventory or actually distributed when, in its judgment, the change demanded was minor, or questionable validity and could just as well have been made effective with new production. Because of the amount of information now required in advertisements, many companies fear they must now purchase multiple section ads where before smaller ads were sufficient, or give up some of their advertising. The requirement that the generic name be used every time the trade-mark is mentioned is anticipated to prove cumbersome and only time will reveal how costly and grotesque in appearance this type of display may prove to be. — Austin Smith, M.D., President, Pharmaceutical Manufacturers Association, to Federal Bar Association meeting, Washington, D. C., June 27, 1963.





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William B. Steen, M.D.

**D**OCTORS of the State of Arizona:

The New Year is before us and not in the happy sense that we would like to have. Our thinking and feelings are still shocked and clouded by the tragic death of our President, John F. Kennedy, whose life was ended on November 22, 1963 by a bullet from an assassin in Dallas, Texas. The horror, the grief and sadness has covered not only our country, but the whole world.

The President's widow has given us a magnificent example of courage and strength to carry on as we must in our grief to keep our country strong, keep the government functioning to face the problems at home and abroad.

OUR new president, Lyndon B. Johnson, moved quickly, surely and with strength in our great hour of weakness and sadness. There was no interruption, no uncertainty and no faltering in the process of government. All Americans rallied to the new president. He has our support and best wishes.

Mr. Johnson has indicated a continuation of the late president's policy in regard to Civil Rights, Tax Cut and Medicare. There must be no letup in our opposition to Medicare. Our Operation Hometown Organization must remain intact, strong, active and effective.

**King-Anderson HR 3920**  
The scheduled nine days of hearing on HR 3920 began on Monday, November 18, and ended abruptly and decisively on Friday, November 22, 1963 with the assassination of the President. Chairman Mills has announced that future public hearings on the King-Anderson bill will be resumed in January. It is reported that our presentation was well documented and well received, while that of our opponents had little except emotional appeal, with little or no documentation.

Something that has been pointed out from time to time was presented by Senator Karl Mundt (R.) South Dakota, who charged the Department of HEW with the obstruction of Kerr-

Mills. He said, "I say the Department is guilty of failing to carry out congressional intent by a program of deliberate sabotage of an act passed by Congress and signed by the President." Specific department staff men were named. He specifically cited activities of other department men in obstructing the enactment of the Iowa MAA program and delays in obtaining approval of the South Dakota program.

This activity of one department of government failing to carry out or sabotaging the congressional intent is just one in many that occur.

**M**R. JOHNSON, our new president, has listed Medicare as one of the must bills to be passed. Again, we must be on our guard, keep our organizations intact and be prepared to give our best efforts at the appropriate time. Dr. Annis has just stated, "This is a call to arms! Now is the time to begin an all-out effort to defeat the King-Anderson bill."

The Doctors, their wives and our friends have done a splendid job, and I can only say much more will be expected of us before victory is obtained. Our way of life is precious with its free medical systems. We must safeguard this rich heritage to cherish it and pass it on to our children.

### State

At the time of the last House of Delegates meeting in May, 1963, in Tucson, an Ad Hoc Committee was appointed to appraise Blue Shield. After much deliberation, this committee requested that the National Association of Blue Shield send a task force of experts to Arizona to help solve the problem here. The group of experts finished their survey. Five recommendations were made for immediate action which were accepted by the Arizona Blue Shield Board of Directors. Don Lau, because of illness, announced his retirement from active management on December 31, 1963. A meeting of the corporate body of Arizona Blue Shield Medical Service that had been called for November 30 was postponed until the first of the year. We wish our prepaid service insurance plan God speed during the year and with the hope that we are on the right track, and that the year ahead will mean gains for Blue Shield.

**D**ON'T forget the three bills for re-introduction into the Arizona Legislature after the first of the year:

1. Our New Medical Practice Act.

## President's Page

2. An Amendment to the Basic Science Law.  
3. A much needed Arizona implementation to the Kerr-Mills Law.

4. I understand a Good Samaritan Bill will be introduced which is greatly needed.

We can all help these bills by giving encouragement and a good word to our Legislators. To continue to give the best possible medicine to the people of Arizona, these bills are sorely needed. We need, if necessary, to give yeoman service to their passage.

### Public Health

Public Health through the country and the state organizations play an important part in our everyday life. They deserve and should have the support of every member of our Arizona Medical Association. The appreciation of the role of public health by the doctors is so important. We must convince our patients, the citizens in our communities and the Legislators that public health must be supported because it is essential to a strong and well Arizona. Unless we take the lead with constructive leadership in developing a strong State Health Department, we will find ourselves pushed in backwards.

A THOUGHT from Dr. Hugh Smith, "Both clinical medicine and public health have skills and disciplines that are required for the solution of many of society's current health problems. Why not pool them and work together? The attitudes of mutual suspicion are harmful and increase the inefficiency of services that are badly needed by the public. Certainly many of our strides in health can be credited to the work of public health."

Public Health is an important facet or part of our health team in our communities, and it should have the wholehearted cooperation of organized medicine.

Health officers are doctors who want to work with us and for us. They can help in many ways to hold back the onslaught of socialized medicine.

In the long run, our attitudes toward public health — our utterances and thinking in our communities can help our State Department of Health in its relationship to the State Legislature, especially in regard to budgets and adequate salaries for its staff.

William B. Steen, M.D.  
President



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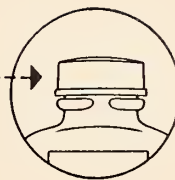
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**"Upon arising, nose was open"** . . . or how another happy patient describes the nasal decongestant action of Dimetapp Extentabs\*—how would *your* patients describe it?/In Sinusitis, Colds, U.R.I., up to 10-12 hours' clear breathing on one tablet/Also available: Dimetapp Elixir, for t.i.d. or q.i.d. dosage..

## **Dimetapp® Extentabs**

[Dimetane® (brompheniramine maleate), 12.0 mg.;  
phenylpropanolamine hydrochloride, 15 mg.;  
phenylephrine hydrochloride, 15 mg.]

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\*CLINICAL REPORT ON FILE, MEDICAL DEPT., A.H. ROBINS CO., INC.

**BRIEF SUMMARY:** *Indications:* Dimetapp reduces nasal secretions, congestion, and postnasal drip for symptomatic relief of colds, U.R.I., sinusitis, and rhinitis. *Side Effects:* In high dosages, occasional drowsiness due to the antihistamine or CNS stimulation due to the sympathomimetics may be observed. *Precautions:* Administer with caution in cardiac or peripheral vascular diseases and hypertension. *Contraindications:* Antihistamine sensitivity. Not recommended for use during pregnancy.



ELEMENTARY, MY DEAR WATSON

“Well my man, you’ve served in the Army.”  
“Aye, Sir.”  
“Not long discharged?”  
“No, Sir.”  
“A Highland regiment?”  
“Aye, Sir.”  
“A non-commissioned officer?”  
“Aye, Sir.”  
“Stationed at Barbados?”  
“Aye, Sir.”

The speaker was Joseph Bell, noted nineteenth century Edinburgh surgeon, and teacher, who was demonstrating his powers of observation and deduction to his medical students. Bell, president of the Royal College of Surgeons, explained the sequence to his students thus:

“You see, gentlemen, the man was a respectful man but did not remove his hat. They do not in the army but he would have learned civilian ways had he long been discharged. He had an air of authority and is obviously Scottish. As to Barbados, his complaint is elephantiasis . . .”

As a student under James Syme, Joseph Bell had been taught to “Try to learn the features of a disease or injury as precisely as you know the features, the gait, the tricks of manner, of your most intimate friend.”

Today, as our diagnostic tests become necessarily more critical, complex and mechanical, we, too, must not lose sight of the need for accurate observations and deductions as we unravel the threads of our diagnostic problems. We must guard against seeing only lesions, charts, and laboratory findings, while overlooking the patient. The specialist, particularly, must be careful not to substitute the laboratory technician for his own well trained observations.

Incidentally, if Joseph Bell’s account to his students suggests the deductive methods of a legendary detective, it should be recalled that one of Bell’s more apt pupils was Sir Arthur Conan Doyle, creator of Sherlock Holmes and his companion, Doctor Watson.

Robert F. Lorenzen, M.D.  
Editor

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1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author’s.
4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
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### THOUGHTS ON THE KING-ANDERSON BILL

by Rev. John P. Doran

**I**N front of a committee as busy and scheduled as is this one, a witness should state his principles and purposes of being here as succinctly as possible. This I propose to do.

First, however, one point must be clarified. No Catholic Priest who has spent his whole active life in parish work, dealing with the poor, the diverse divisions of the middle classes, and with the wealthy, can be indifferent to the matter of adequate medical care. It is my concern in general, and has been my concern many times in particular, to see that the parishioners of my different parishes have received medical care when it was needed. No reasonable person can be indifferent to another's medical need.

I find myself, however, in opposition to H.R. 3920, sponsored by Congressman King of California, even though the bill is designed to provide hospital and related services to aged beneficiaries.

When a person finds himself, as I do, in favor of help to those who need help for medical expenses, and opposed to a bill which purports to provide that help, there must be some explanation. There is.

Historically all through Christian times there has been a concern for the sick and especially the needy sick. In the Catholic Church many Religious Orders were founded for just this purpose of aiding the ill, and especially the needy sick. In most of the other Christian denominations the similar care has been evidenced in the hospitals which they have built and maintained. The State, too, has exercised interest in the care for the needy ill through county and state hospitals and more recently through the provisions of the Kerr-Mills act.

We hold no quarrel with the fact that there will in all probability always be those whose medical need must be met by private or state assistance. Indeed, the Lord Himself said: "The poor you will have always with you." It will happen at times, it does happen, that state and even federal aid is necessary to provide medical care adequately for those who cannot provide it for themselves, or for whom private social agencies cannot provide.

The fundamental fault of the bill presently under consideration, I think, and hence the reason for my opposition to it, is that it does not follow the basic and historical approach of giving medical aid to those who need it, but seeks to provide this aid whether need or not. This is a radical departure from a wise tradition that people should provide for themselves, and that — only when they fail — will an outside agency come to their assistance.

I call the tradition of providing for oneself and family a wise one for it is consonant with the nature of man that he is bettered and ennobled by the fulfillment of his obligation in so far as he is able. Just as parents, who out of a false sense of tenderness seek to avoid placing any obligations on their little children, hamper seriously their children's chance of reaching a strong and mature man or womanhood; so, too, does government as it lifts more and more obligations off its citizens enfeeble these citizens, and make them that much less self-reliant.

You see, gentlemen, I am a great admirer of people. Eighteen years as a parish priest has caused me to admire people even more. I know that they are not perfect, far from it; that they need many times some encouragement and sometimes a rebuke. But, as Higgins says in *My Fair Lady*, "by and large we are a marvelous race." People need to be free to go on about their own business of living, providing that they are not infringing upon the rights of others. Only when they are in some serious difficulty, be it physical or mental, do they need to be taken over. I, as a priest, must respect the rights of everyone of my parishioners, from the tiniest child to the old centenarian who used to wait at the church before early Mass so that he could accuse me of "liking the bed, young man." I must respect their rights for they do not belong to me, but rather I to them. Gentlemen, it seems to me that the government is in the same position, it must respect its people's rights, avoid taking them over except in case of individual and proven need. And for the same reason: people do not belong to the government, nor do their rights and obligations.

To my mind this bill to provide medical care to those who do not need it is an unwarranted extension of the federal government into a field where it does not need to be, and — I submit — therefore does not belong.



Let me give you an example of what I mean. At the parochial school attached to the parish of which I am Pastor we have a cafeteria. Those children who wish may eat their lunch there, others may bring their own lunch, others may go home for lunch. Both the Government and I provide a number of free meals for children where there is a hardship at home to finance these meals. This is as it should be. To carry the philosophy of this bill (H.R. 3920) over to our school, I would issue an edict that all lunches are to be free from this time on, and that the costs of the cafeteria would be met by a taxation added to the tuition costs of the school. What would I have done? I would have taken away from the parents of the children their freedom of choice, and though I would have seemed so benevolent in providing free lunches, I would still be charging for these lunches, but now under the guise of a taxation. Those who are eating free now would continue to eat free, because they would be unable to pay the taxation any more than they can now pay for the meal. The others would have had taken from them the right to choose and the right to provide for themselves.

An attempt has been made, I know, to establish that all those, or even most, of those over sixty-five are in need of this government assistance to meet their medical bills. With fifty-five percent of the nation's elderly (those over 65) now providing health insurance plans of their own, and a Kerr-Mills Law to provide for most cases of older citizens in actual need of assistance in their medical bills, it is hard to see just how valid this claim to universal need on the part of the aged to government assistance in their medical bills can be. I noted somewhere that a University of Michigan survey showed that 96% of the aged did not owe any money to doctor, dentist or hospital. It would appear that the aged are already meeting this need themselves.

This radical departure from our traditional basis of aid is based upon a judgment that all, or even most, of the aged in this country are in need of government assistance to meet their medical costs. The judgment is that the aged are a mendicant class, a class in need. Personally I doubt if this can be verified, and I feel that the claim itself is an unwarranted reflection upon our society. We do, as a society, give to our aged the opportunity to provide for themselves.

Those over 65 comprise nine percent of the population and receive eight percent of the total national income. This is according to our census bureau. It is, then, hard to see the aged as a class to be poverty stricken, unless we would wish to hold that population in general is poverty stricken too.

To me a basic theory of the lives of people is this: the right things which an individual can do for himself he should be allowed to do for himself. Only when the individual is incapable of providing for himself does there come to be a need for provision from above. Each man has the right and duty to seek to provide for himself and his dependents the necessities of life. This is basic to his manhood! Only when he has failed (the fault his or of circumstance) should there be an intervention from outside.

This presentation of mine, gentlemen, may seem a bit philosophical. For this I offer no apology; in fact *for this* I came across the country to speak before you. As the lawmakers of this nation you influence and will influence the philosophy of life of all our people. Laws of importance do not remain dead letters on a page; they creep into the daily thinking of the people of the land. When a law is designed by its nature, as I think this one is, to take over the individual responsibility of providing for one's health, and to substitute for this individual responsibility another function of the government supported by enforced taxation (which the Social Security tax basis for this bill actually is) then that law is just one step further in making the individual the dependent of the state instead of its master. This law, for all the humanitarian oratory which has surrounded it, debases man. It takes away from him his right and duty to provide for his own necessities in the field of health, and reduces him to childlike dependence upon his government for things which he should, and usually can, provide for himself.

In conclusion, gentlemen, I would urge you: let the government continue to help the aged who have a proven need for medical assistance; but do not let it set up a system whereby it infringes upon man's basic right and duty to provide for himself. To do so is to belittle and debase the citizens of our land.

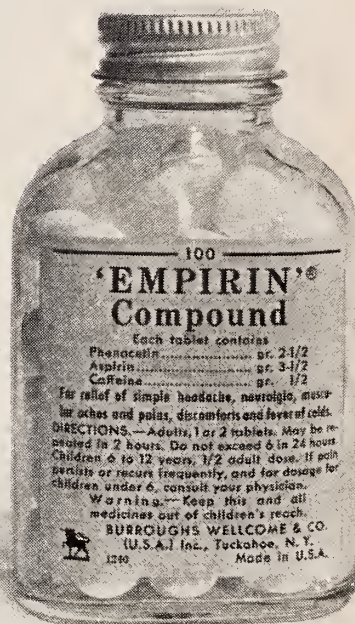
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Testimony presented to the United States House of Representatives Ways and Means Committee on November 23, 1963. Rev. Doran is the Pastor of St. Thomas The Apostle Catholic Church, Phoenix, Arizona and this paper is reprinted with his permission.



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## THOMAS A. HARTGRAVES, M.D. 1893 - 1963

Thomas Anderson Hartgraves, M.D. was born August 25, 1893 at Summer, Texas. His parents were true pioneers of the old western tradition; and he grew to manhood, one of ten children, on a small ranch near Paris, Texas.

His natural aptitude and love for learning led him to seek higher education at the Commerce, Texas Normal School; and after preparatory years there, he entered the University of Tennessee School of Medicine in Memphis, Tennessee. He graduated with honors in 1915, and then served his internship at Memphis General (now John Gaston) Hospital.

A year in general practice at Sopa, Oklahoma followed; and upon entry of the U. S. into World War I, Doctor Hartgraves left to serve in France as Major in the Army Medical Corps. At war's end he entered resident training in pathology at New York's Rockefeller Institute.

Thereafter he practiced pathology and operated clinical laboratories at Okmulgee and Muskogee, Oklahoma. In accord with the trend of the times, he soon found it desirable to seek further training in radiology; and this was obtained at St. Louis and at Memorial Hospital in New York. From that time he directed the clinical and radiological laboratories at Morningside Hospital in Tulsa, Oklahoma until 1934, when he was selected to be head of the laboratories at the Lois Grunow Memorial Clinic in Phoenix. In that capacity he served, limiting his efforts to the field of Radiology, until the dissolution of the Clinic organization in 1953. After that time he continued in the private practice of Radiology in the Lois Grunow Memorial building.

As his close associate and intimate friend for over seven years, I came to know Doctor Hartgraves very well, indeed. Under all circumstances, whether trying or congenial, and at all times, he was a gracious gentleman. Ever a simple, comfortable man to be with and to work with, he possessed a keen mind, wide knowledge and an exceptionally retentive memory.

He was a lover of history, particularly the stories of the war between the States, and his fund of information in this area was profound.

He was widely respected by his medical colleagues, was a past president of the Arizona Radiological Society, and served for fifteen years



as Councilor from Arizona to the American College of Radiology. He was certified in Radiology by the American Board of Radiology in 1938, and was honored with Fellowship in the College in 1942. He made various contributions to the literature of Pathology and Radiology; probably the most outstanding of which was his pioneer work in the field of hysterosalpingography with radiopaque contrast media. He was a member of the American Roentgen Ray Society, the Radiological Society of North America, the AMA, the Arizona Medical Association and the Maricopa County Medical Society. He was a 32nd degree Mason and a life member of the Shrine.

Doctor Hartgraves is survived by his wife, Ruth; two daughters, Elizabeth and Ruth; nine grandchildren; two sisters and a brother. His son, John, preceded him in death in 1962.

Doctor Hartgraves' many contributions distinguished him; but his true stature was best revealed by his kindly good humor and the never failing gentleness which showed forth through his life at all times.

*He has taken up his candle and gone  
Into a room we cannot find;  
But we can know where he has been  
By the lights he left behind.*

Don E. Matthiesen, M.D.



in virtually all diarrheas...prompt symptomatic control

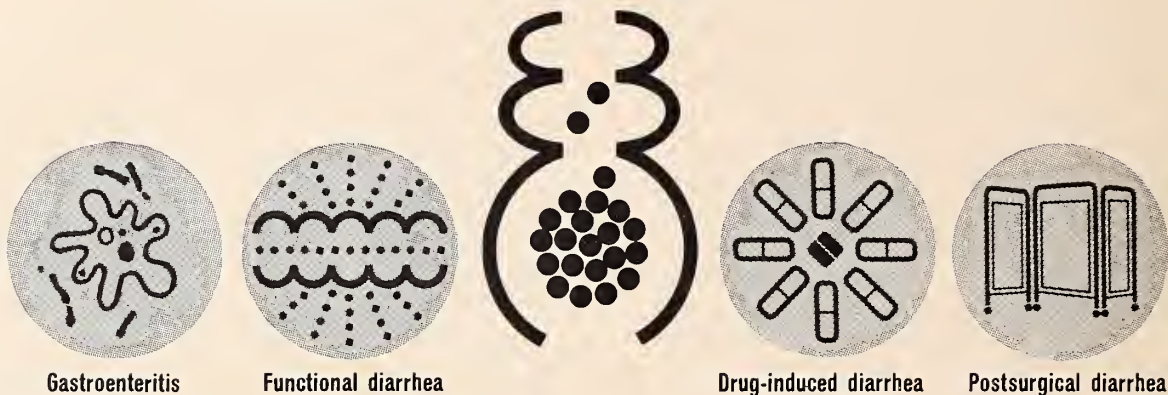
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It should be noted, however, that Lomotil has proved highly useful in mild to moderate ulcerative colitis and in several other refractory forms of diarrhea.

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For complete prescribing information, please see *PDR* or available literature.

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# who were the 'untreatables'?

From their inception with cortisone, to the present-day variants of the steroid molecule, the corticosteroids have presented a therapeutic paradox. The beneficial action against inflammation and allergy as well as several undesirable metabolic effects are all, apparently, the results of the same basic physiologic action.<sup>1</sup>

Some of these associated metabolic reactions made it risky or otherwise undesirable to treat with steroids large numbers of patients in various categories who would otherwise have benefited from such management. These "untreatables" were overweight, had cardiac disease, hypertension, or pulmonary fibrosis associated with congestive heart failure. Also in this category were those patients whose emotional symptoms were aggravated by earlier steroids.

But the advent of ARISTOCORT® Triamcinolone in 1958—the result of biochemical and pharmacologic research which successfully stripped away many important undesirable hormonal effects from the primary anti-inflammatory action—dramatically changed this picture. This steroid did not overstimulate the appetite, or cause the excessive weight gain induced by other steroids;<sup>2,7</sup> it proved to have one of the best records of any steroid for *not* causing edema, or salt-and-water retention;<sup>2,3,7-10</sup> and the incidence of undesirable euphoria with this agent was remarkably low.<sup>2,4,5,9,10</sup> What is most significant is that these benefits have stood the test of more than 5 years of widespread use. And, of course, the avoidance of these distressing hormonal effects benefited *all* patients requiring steroids, not just those in the special categories, as demonstrated by wide clinical use.

**Side Effects.** Since it may, under some circumstances, produce any of the unwanted effects common to all cortisone-like drugs, discrimination should always be exercised in administering ARISTOCORT® Triamcinolone. Any of the Cushingoid effects are possible, as are purpura, G.I. ulceration, increased intracranial pressure and subcapsular cataract. Corticosteroids generally may mask outward signs of bacterial or viral infections. Catabolic effects to watch for include muscle weakness and osteoporosis. Weight loss may occur early in treatment but is usually self-limiting.

**Contraindications.** While the only absolute contraindications are tuberculosis and herpes simplex, there are some relative contraindications (peptic ulcer, glomerulonephritis, myasthenia gravis, osteoporosis, fresh intestinal anastomoses, diverticulitis, thrombophlebitis, psychic disturbance, pregnancy, infection) to weigh against expected benefits.

While no steroid can *cure* a susceptible disorder, many patients who would otherwise be confined in a state of invalidism have, on ARISTOCORT® Triamcinolone, been able to pursue active, useful lives.

**References:** 1. Levine, R.: Rationale for the Use of Adrenal Steroids, Paper presented at Annual Convention, Medical Society of the State of New York, New York, May 13-17, 1963. 2. Hollander, J. L.: Clinical Use of Dexamethasone. *JAMA* 172:306 (Jan. 23) 1960. 3. Boland, E. W.: Chemically Modified Adrenocortical Steroids. *JAMA* 174:835 (Oct. 15) 1960. 4. McGavack, T. H.: The Newer Synthetic Adrenocortical Steroids in Therapy. *Nebraska Med. J.* 44:377 (Aug.) 1959. 5. Freyberg, R. H.; Berntsen, C. A., Jr., and Hellman, L.: Further Experiences with  $\Delta^1$ , 9 Alpha Fluoro, 16 Alpha Hydroxyhydrocortisone (Triamcinolone) in Treatment of Patients with Rheumatoid Arthritis. *Arthritis Rheum.* 1:215 (June) 1958. 6. Cahn, M. M. and Levy, E. J.: Triamcinolone in the Treatment of Dermatoses. *Amer. Practit.* 10:993 (June) 1959. 7. AMA Council on Drugs: New and Nonofficial Drugs. *JAMA* 169:255 (Jan. 17) 1959. 8. McGavack, T. H.; Kao, K.-Y. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.: Clinical Experiences with Triamcinolone in Elderly Men. *Amer. J. Med. Sci.* 236:720 (Dec.) 1958. 9. Fernandez-Herlihy, L.: III. Use and Abuse of Corticosteroid Therapy—The Structure and Biologic Activity of the Corticosteroid Hormones and ACTH. *Med. Clin. N. Amer.* 44:509 (Mar.) 1960. 10. McGavack, T. H.: Triamcinolone: A Potent Anti-inflammatory Sodium Excreting Adrenosteroid. *Clin. Med.* 6:997 (June) 1959.

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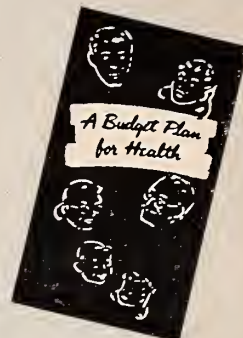


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## Topics of Current Medical Interest

### Esophageal Speech and the Phoenix New Speech Club

The Phoenix New Voice Club consists of approximately forty laryngectomees in the Phoenix metropolitan area. The club has monthly meetings and sponsors speech classes to the members on a weekly schedule.

Many members of the club have become very proficient in talking by the esophageal method without using artificial aids. A member of the club is always available and willing and anxious to counsel with patients prior to or immediately following laryngectomies. The operation is bad enough but the worry and anxiety before and after surgery is difficult to describe. The members of the club feel that they can be of great

psychological help to such patients and are anxious to be helpful and consoling to them if the physician desires it.

If you have such a patient, and would like one of the members of the club to visit with them, a phone call will bring a prompt response. Call the Maricopa County Cancer Society, who will always be able to contact a member quickly.

The club would also appreciate your telling any known laryngectomees in this area of the club and if they are interested in attending the meetings, have them call President Edmund Decker, 265-0524.

---

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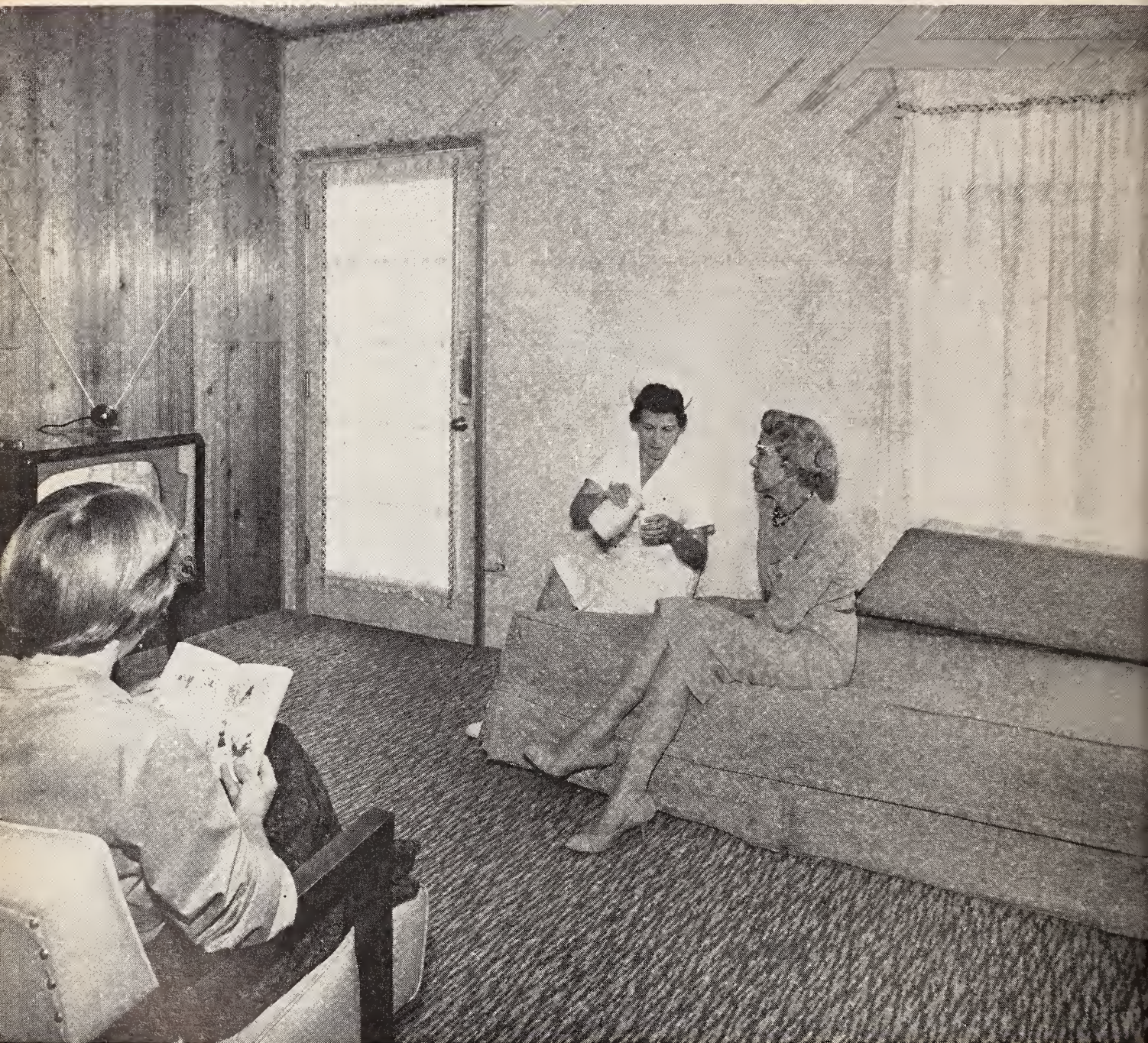
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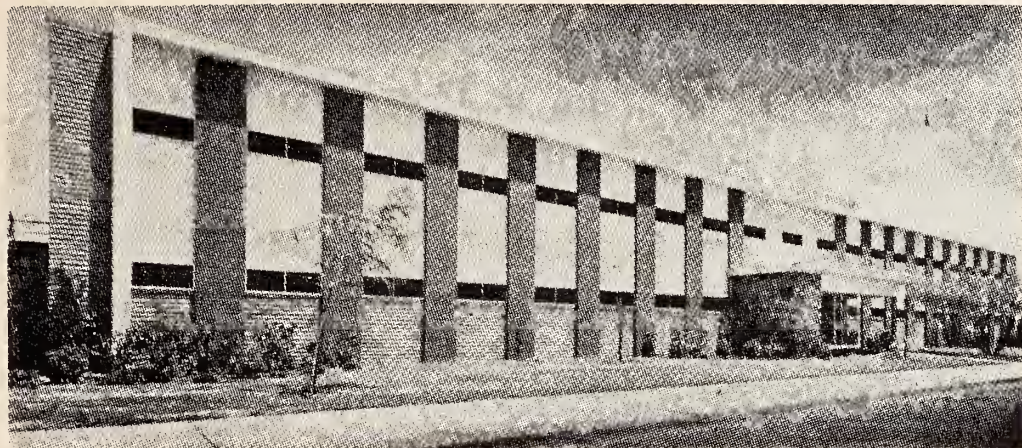
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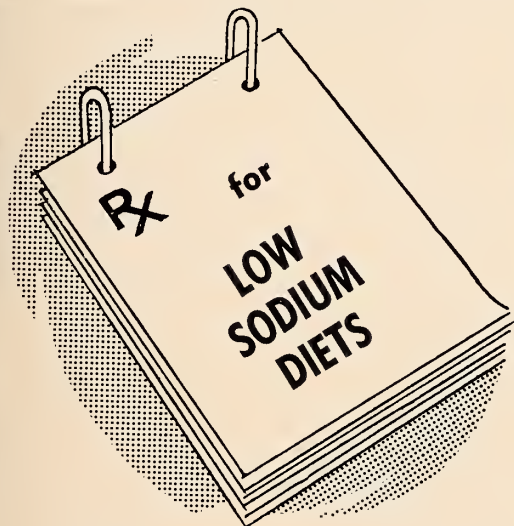
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# Arizona Medicine

JOURNAL OF ARIZONA MEDICAL ASSOCIATION  
MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO



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Vol. 21, No. 2

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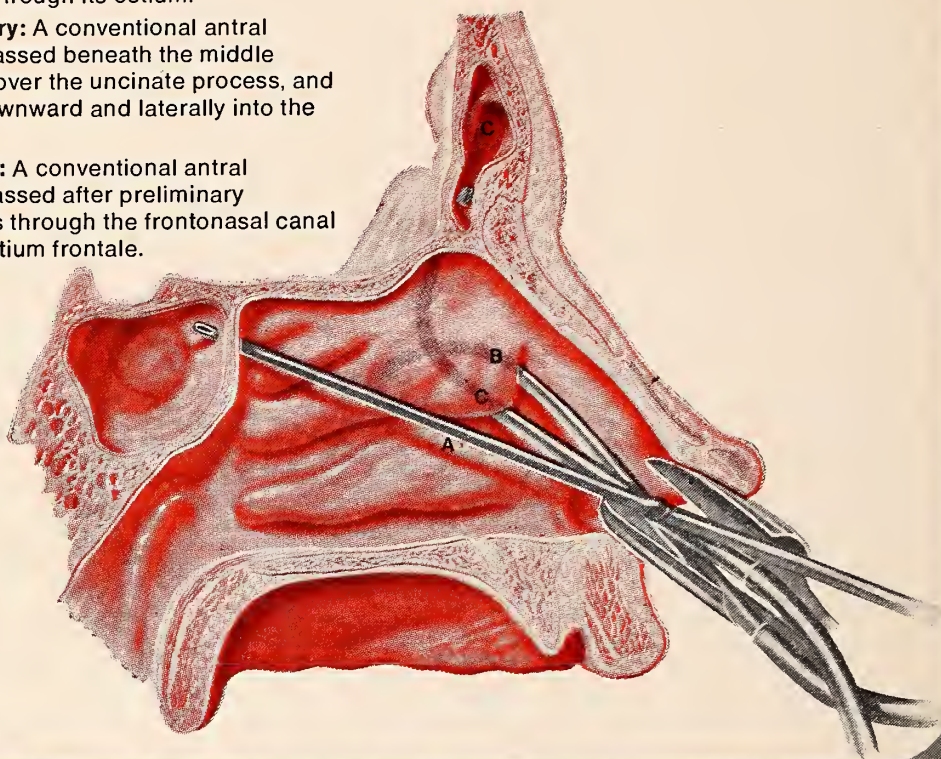
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\*Reed, G. F.: Sinusitis, *New England J. Med.* 267:402, Aug. 23, 1962.

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# Arizona Medicine

JOURNAL OF ARIZONA MEDICAL ASSOCIATION  
MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO



February, 1964

Vol. 21, No. 2

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## PROFESSIONAL COMMITTEE

Meeting of the Professional Committee of The Arizona Medical Association, Inc., held Sunday, December 15, 1963, in the French Quarter of the Safari Hotel, Scottsdale, Arizona, convened at 10:10 A.M., Robert B. Leonard, M.D., Chairman, presiding.

### ROLL CALL

#### Present:

Drs. Baker, Earl J.; Bendheim, Otto L.; Brewer, W. Albert; Cole, Roger W.; Farness, Orin Jr.; Fife, Ray; Henderson, Charles E., Secretary; Kohl, Jr., Harold W.; Leonard, Robert B., Chairman; Meyer, Karl L.; Rhu, Hermann S.; Steen, William B., President.

Messrs. Boykin, Paul R., Assistant Executive Secretary; Carpenter, Robert, Executive Secretary; Ledwidge, Joseph A., Executive Assistant.

#### Guests:

Drs. Farner, Lloyd M., Commissioner, Arizona State Department of Health; Waldron, Carl M., Member, Arizona State Civil Defense Committee.

#### Excused:

Dr. Alway, James D.

### MINUTES

It was regularly moved and carried that the minutes of the meeting of the Professional Committee held January 13, 1963 be approved as printed and circulated among the members.

### MEMBERSHIP

The Chairman welcomed and introduced the new members of the Professional Committee: Harold W. Kohl, Jr., M.D. (Subcommittee on Aging); Roger W. Cole, M.D. (Subcommittee on Hospitals, Nursing and Hard of Hearing) and Karl L. Meyer, M.D. (Subcommittee on Venereal Diseases and Medical Education).

### SUBCOMMITTEE REPORTS

#### Aging

Doctor Kohl reported the only item of business coming to the attention of the subcommittee on Aging was a questionnaire from the American Medical Association relative to its bulletins on aging; said bulletin reporting in three areas (1) the AMA activities in aging; (2) activities of the other states and local societies on aging; and (3) all other state and local activities associate with legislative programs conducted relative to the subject of aging.

Doctor Kohl indicated that he had requested receipt of all of these items of information from the AMA.

It was regularly moved and carried that the committee accept the report of the subcommittee on Aging.

#### Disaster Medical Care

Doctor Baker reported on the activities of the subcommittee on Disaster Medical Care and made recommendations which will be submitted in writing to the Board of Directors.

The Chairman of the subcommittee on Disaster Medical Care recommends that there be an annual speaker or speakers on a portion of the program of the Annual Meeting devoted to Disaster Medical Care and that an exhibit be prepared and be had annually at the State

Association meeting.

It was moved and seconded that there be an annual meeting of the Disaster Medical Care subcommittee to coincide with the State Medical Association annual meeting; that a strong effort be made to establish a position staffed by a doctor or a physician in the State Public Health Department entirely devoted to disaster medicine; that a portion of the annual meeting program be devoted to Disaster Medical Care.

#### General Medicine

Doctor Farness discussed the development of a statewide Rheumatic Fever program, under the sponsorship of the Arizona State Department of Health, the purpose of which would be (1) to provide low cost penicillin in order to lighten the financial burden inherent in providing daily oral penicillin for the prevention of recurrent rheumatic fever; and (2) to secure statistical data concerning rheumatic fever.

It was recommended that we endorse the program of the State Health Department, implementing the low cost purchase or free distribution of penicillin on proper application and clearance for those physicians who want it for children who have had rheumatic fever or are subject to recurrence of strep infections.

The chairman reported the conclusions of the Phoenix Ophthalmological Society which were; that glaucoma screening does play a part particularly as an educational medium to alert the public to the existence of the disease but as a true screening device to uncover previously undetected cases of glaucoma it has definite limitations. Because the results of glaucoma screening are less easy to interpret and are less clear cut than other forms of health screening and because it was felt that glaucoma screening was important more for its educational aspects than as an accurate means of detecting cases of glaucoma, it was felt inadvisable to include glaucoma screening as a part of the State Health Department multi-screening program.

The committee reaffirmed its recommendation that we look forward to discontinuing the multi-phasic screening but to continue the program of the mobile x-ray units. This recommendation should include that the continuation of the multi-phasic screening program should be at the discretion of Doctor Farner's department and his financial support.

The chairman reported on the subject of hyper hemoglobin and its comparison with poliomyelitis immune globulin and referred to a requested announcement relative thereto, published in the September 1963 issue, Volume 20, Number 9 of Arizona Medicine.

It was recommended that Doctor Frank Shallenberger of Tucson write an additional article for publication in Arizona Medicine, indicating what this product is; how it compares with the other; and where it can be obtained.

The chairman reported on a communication from the American Medical Association relative to a national program against smallpox and tetanus.

The committee unanimously adopted the following resolution for presentation on the floor of the House of Delegates at the 1964 Annual Meeting of ArMA:



# Arizona Medical Association Reports

WHEREAS, the American Medical Association is presently sponsoring a nationwide program for immunization against smallpox and tetanus, and

WHEREAS, the American College of Surgeons are also presently sponsoring a nationwide program for immunization against tetanus, and

WHEREAS, there were approximately 400 cases of tetanus with a 60% mortality in the United States last year and an ever increasing problem with smallpox, and

WHEREAS, the National Security and Disaster Committee of the American Medical Association on critical review of the potential bacteriological warfare problem has made the primary project of 1963 an effective mass immunization program with particular emphasis on tetanus and smallpox; therefore be it

RESOLVED, that the Arizona Medical Association go on record strongly in favor of a program of immunization against smallpox and tetanus in the State of Arizona and that this program be implemented at the local level.

It was strongly suggested by the subcommittee on General Medicine that appropriate news releases be prepared and released by the Public Relations Committee of ArMA in cooperation with the State Health Department, informing the public of the various campaigns in the field of health, such as notification of National Diabetes Week.

The chairman reported on the activities of the Poisoning Control subcommittee.

It was directed that a letter be forwarded to the Poisoning Control subcommittee that the minutes of their meeting of May 17, 1963 had been reviewed and commending them on their activities.

MEETING ADJOURNED FOR LUNCHEON AT 12:50 P.M.

MEETING RECONVENED AT 2:05 P.M., ALL MEMBERS PRESENT AT THE MORNING SESSION RESPONDING "AYE" TO THE ROLL CALL

## Hospitals, Nursing and Hand of Hearing

Doctor Cole reported on the activities of the Arizona State Nurses Association relative to private duty fees.

Doctor Steen, President of ArMA, informed the committee of the problems associated with the hospital licensing rules and regulations in Arizona and the suggestions and recommendations of the Professional Liaison Committee of ArMA, who also has considered these problems.

Considerable discussion was held on the subject of control of the building and financing of structures for new hospital beds and it was ultimately determined that Doctor Steen, President of ArMA, being in attendance and a member of the Hospital Construction and Advisory Committee, would discuss these items of business with that group and the Board of Directors of ArMA.

## Maternal and Child Health

The chairman, Doctor Rhu, referred to an inquiry from H. Howard Holmes, M.D. of Eloy, Arizona, relative to the requirements of giving a complete physical

examination including a standard serological test to determine whether or not syphilis was present.

The committee has determined that according to the law (ARS 25-103.01) a complete physical examination is part of the requirements.

It was regularly moved and unanimously carried that the committee formally request an interpretation of the law from the Commissioner of the Health Department of the State of Arizona.

The chairman reported on a request from the Department of Public Welfare of the State of Arizona referable to development of statewide standards recommended for health care of the foster home child.

It was determined that this committee recommend to the Board of Directors that these standards be accepted as minimal standards.

The chairman recommended that the subcommittee membership consist of Doctors Edward Sattenspiel (OBG); Clarence B. Warrenburg (OBG); Derrill B. Manley (PD); Richard B. Johns (PD) all of Phoenix, together with Doctors John McEvers (OBG); Martin S. Withers (PD); Herbert E. Pollock (OBG); Philip E. Dew (PD); Richard S. Armstrong (PATH); Maxwell R. Palmer (ANES); Harold W. Kohl, Jr. (I) all of Tucson; Doctor Martin Cohen (OBG) of Yuma; Doctor Gilbert L. Seehrist (PD) of Flagstaff and Doctor William J. Moore (PH) of the State Department of Health, Phoenix.

It was regularly moved and carried that this report be accepted.

## Mental Health

The chairman of the subcommittee reported on the SKF pamphlet on promotion of "Cooperative Planning for Mental Health" indicating that they had spent huge sums of money to sponsor these programs and that he will contribute to the objective if requested to do so.

It was determined to refer this matter to the Board of Directors of ArMA for approval or otherwise.

The chairman reported on the status of the AMA statement referable to H.R. 3688 (1963 Community Mental Health Centers Act) and particularly the deletion of provision providing for the staffing of mental health centers which is in line with AMA House action; and H. R. 3689 (1963 Mental Retardation Facilities Construction Act) both of the 88th Congress. As the measures were finally enacted, it resolves itself into a "brick and mortar" proposition.

It was regularly moved and carried that the committee accept the report of the subcommittee on Mental Health.

A resolution of the Arizona Psychiatric Society relating to the Arizona State Hospital passed unanimously by that group on October 20, 1963, urging the support of The Arizona Medical Association, Inc., was reviewed by Doctor Bendheim.

The committee unanimously determined to forward the resolution to the Board of Directors of ArMA for its review and action.

## Rehabilitation, Industrial Health and Crippled Children

The chairman reported on the activities of the subcommittee relative to (1) the recommendation to the county medical societies for the continuation of establishing Committees on Rehabilitation; (2) a continuing



## Arizona Medical Association Reports

program of seeking information from varying sources on the rehabilitation facilities available throughout the country; (3) and continuing efforts to obtain information regarding university teaching programs in the field of rehabilitation.

The University of Arizona has expressed a desire and interest in working with medicine in its program of rehabilitation and the suggestion has been made that in this regard, we keep in close contact with the Pima County Medical Society; further, that it is the hope that the Pima County Medical Society will relay relative information to the other component county medical societies in Arizona.

In the event a rehabilitation department is being established at the University of Arizona, it is recommended that it should have adequate medical guidance.

It was moved by Doctor Steen, seconded by Doctor Fife and unanimously carried that the Pima County Medical Society investigate the rehabilitation center at the University of Arizona in Tucson and that it then send a report to the Board of Directors of The Arizona Medical Association, Inc.

It was moved by Doctor Brewer, seconded by Doctor Rhu and unanimously carried that the President of ArMA be asked to appoint an ad hoc committee from among the members of the Arizona Medical Association, to study the medical role related to the rehabilitation center of the University of Arizona.

Doctor Steen appointed the following doctors of medicine to serve on the ad hoc committee above referred

to: Doctors Roger W. Cole; Orin J. Farness; Harold W. Kohl, Jr.; and Hermann S. Rhu designated as chairman.

It was directed that the minutes of this meeting show and the Board of Directors be informed of the desire of the Chairman of the Rehabilitation subcommittee that this information be disseminated both through the State Journal and to the County Medical Societies relative to the lists of rehabilitation material and other information available through the chairman, Doctor Fife.

### Venereal Disease and Medical Education

Doctor Meyer reported regarding his attendance at a Southwest Regional Meeting on Venereal Diseases held in Santa Monica, California on a recent date, for the edification of the members.

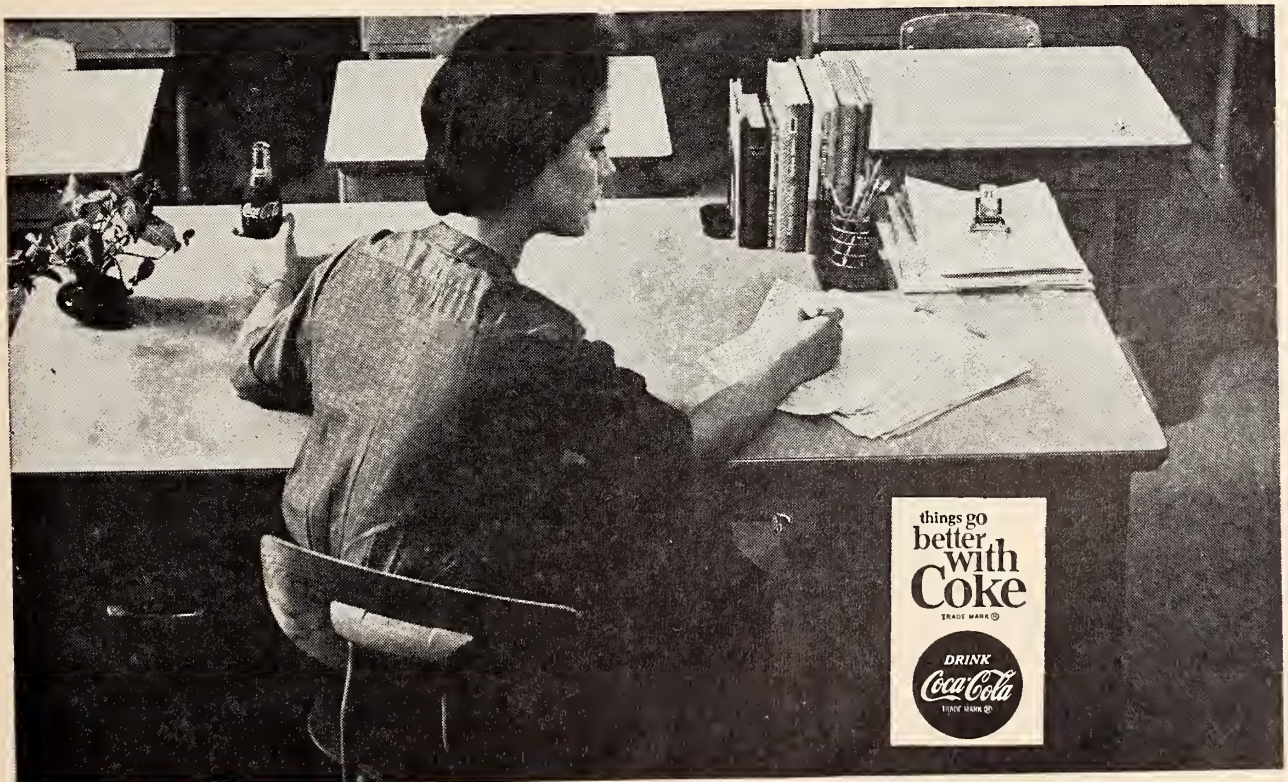
Doctor Meyer reviewed the Annual Report of the Venereal Disease Department of the Arizona State Health Department for the information of the committee.

It was reported that television spot announcements relative to Venereal Disease are available from other sources and it may be possible that local stations may devote free time as a public service for them to be shown in Arizona.

It was recommended to the Board of Directors that this possibility be investigated for showing in Arizona.

MEETING ADJOURNED AT 5:05 P.M.

CHARLES E. HENDERSON, M.D.  
Secretary



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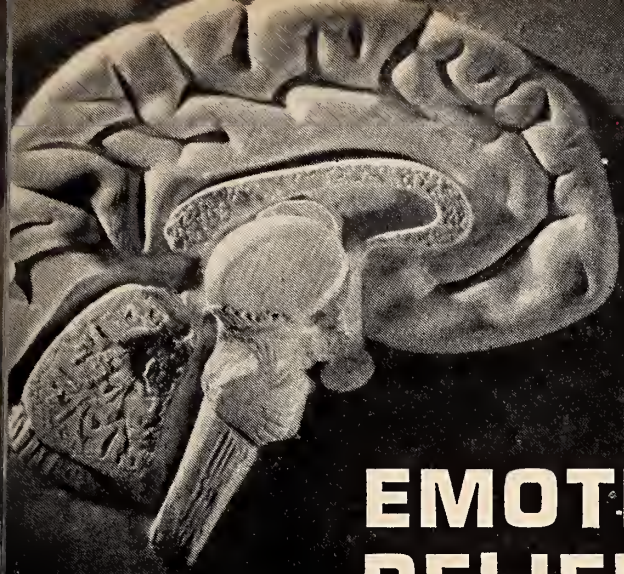
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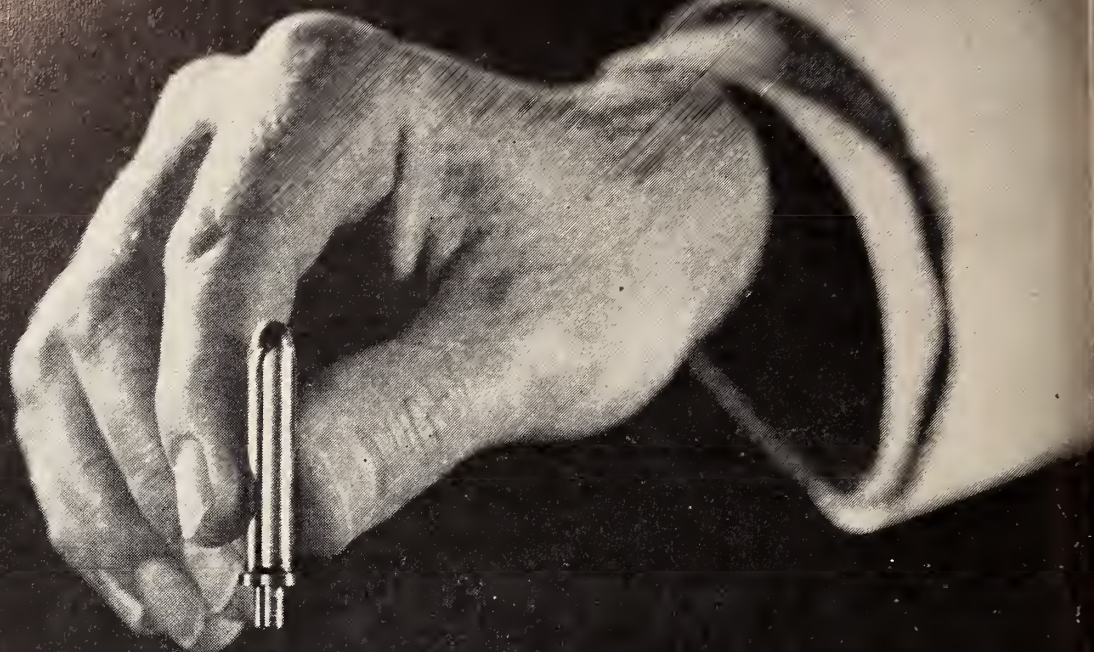
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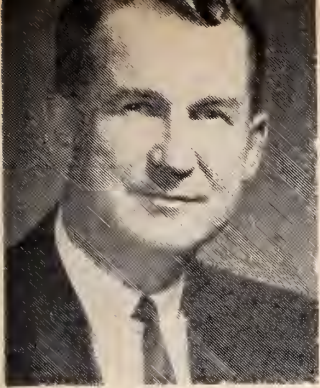
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John R. Green, M.D.

# The Great Books of Medicine

by

John R. Green, M.D.

Here is presented a succinct, synoptic review of some of the classics in medical history. It is said that books reflect the depth of intellect of the author, and here in this group is reflected the image of some of the giants of their era. It is well to review their contributions and consider the ideals which they exemplify.

**H**ISTORY is one of the most driving forces of life. Santayana reminds us that "those who cannot remember the past are condemned to repeat it." Billroth, the leading Viennese surgeon of the late 19th century, puts the same thought in other words: "Only the man who is familiar with the art and science of the past is competent to aid in its progress of the future."

Tonight I shall outline for you the story of some of the Great Books of Medicine in that they are exemplary of their historical period and each made significant and decisive contributions to the progress of Medicine. These texts include the following:

1. Edwin Smith Papyrus and the Ebers Papyrus of the Egyptian era,
2. Corpus Hippocraticum of the Greek period,
3. Canon of Avicenna of the Arabic period,
4. De Humanis Corporis Fabrica of Vesalius in the Renaissance era,

5. De Motu Cordis by William Harvey (17th century),

6. Inventum Novum by Auenbrugger in 1761 A.D.,

7. Seats and Causes of Disease by Morgagni in 1761 A.D.,

8. An Account of the Foxglove and some of its Medicinal Uses (1785 A.D.),

9. An Inquiry into the Causes and Effects of the Variolae Vaccine (1798 A.D.),

10. De l'auscultation mediate by Laennec (1816 A.D.),

11. Cellularpathologie by Virchow in 1858 A.D., and

12. Principles and Practice of Medicine by Osler in 1892 A.D.

## The Edwin Smith Papyrus and the Ebers Papyrus

The Edwin Smith Papyrus is not only the oldest known medical writing but also the most important and complete treatise on surgery of all antiquity. It is believed to have originated with Imhotep and his followers. It was acquired at Luxor in 1862 and is believed to have been

Presented to Alpha Epsilon Delta, The National Premedical Honor Society, guests and faculty, Arizona State University, December 5, 1962, Tempe, Arizona.

Neurological Chairman of the Division of Neurological Surgery, Barrow Neurological Institute, St. Joseph's Hospital, Phoenix; Lecturer, Department of Life Sciences (History of Medicine), Arizona State University, Tempe, Arizona.



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written about 1700 B.C. The book outlines proper diagnosis, prognosis, and treatment in a series of surgical cases. In it, the brain is first mentioned.

The Ebers Papyrus is one of the most valuable medical books in existence. It probably belonged to one of Imhotep's sanctuaries, and is believed to have been written between 1553 and 1550 B.C. This papyrus emphasizes the medical aspects of Egyptian practice.

Imhotep lived about 3,000 B.C., and became a full deity in 525 B.C., when Egypt became a Persian province. He was active as Grand Vizier, architect, priest, scribe, sage, astronomer and magician initiating a cult as early as 2850 B.C. His name signifies "he who cometh in peace."

**A** NATOMICAL knowledge was perhaps less superficial than appears from the study of documents. The heart was recognized (Ebers papyrus) as the center of the blood supply and also the fact that "there are vessels attached to it for every member of the body." It also mentions that the motion of the heart can be detected by placing the fingers on the head, the hands, the arms and the legs. The surgeons knew where the main blood vessels were located. Most of the knowledge of anatomy was obtained from animals.

Physical examination included the pulse, palpation, inspection, and also listening to the chest with the ear.

Therapeutics consisted of a mixture of mystical and rational therapy. Prescriptions on papyrus showed an amazingly complex materia medica. The balance was known in Egypt in 1380 B.C. Some of the druggists were female and were capable of preparing various potions, lotions, honey, etc. Beer, yeast, oil dates, opium, various lead preparations, parts of animals (organs), castor oil, pills, suppositories, emetics, enemas, poultices, ointments, etc. Metal instruments were heated to stop bleeding. The knife was used in ancient Egyptian surgery and was made of stone originally, iron as early as 1600 B.C., and later of bronze and iron. Knives were used to cut hair, open abscesses, and to remove tumors. Wounds were bandaged with linen dressings which were impregnated with myrrh and honey. Circumcision was used, dating back to the 5th millennium B.C.

### The Corpus Hippocraticum

Hippocrates (460-377 B.C. — approximately),

physician and teacher, dominated the schools and physicians of his time. He stood above priestly medicine and empirical medicine, included the sum knowledge of the past, and advanced to new investigations and new concepts. He established himself as the most important and most complete medical personality of antiquity. His great reputation was established by four major contributions, namely:

1. The basic principle that disease is a natural process, not supernatural, that symptoms are the reaction of the body to disease, and that the chief function of the physician is to aid the natural forces of the body.

2. His writings, the Corpus Hippocraticum, may well have been the library of the School of Cos, treatises written by Hippocrates, colleagues, pupils, and later disciples.

3. His pupils and disciples, and,

4. His teaching of human compassion and ethical standards, including the Oath of Hippocrates.

Some of the Hippocratic titles include: On The Physician, On Honorable Conduct, Precepts, On Anatomy, On the Nature of the Bones, On the Humours, On Crises, On Critical Days, On the Use of Liquids, On Fractures, On the 7th Month Fetus, On the 8th Month Fetus, On Dentition, On Diet, The Prognostics, The Coan Praenotions, Of Praenotions, The Aphorisms, The Physician's Establishment, On Wounds and Ulcers, On Hemorrhoids, On Fistulas, On Injuries to the Head, On Fractures, On Reduction of Dislocation, On Airs, Waters, and Places, and two of the 7 books on Epidemics. Other books and writings probably came from others at the same time and later periods and were included in the Corpus Hippocraticum.

**T**HE Aphorisms, collected in 7 books, is the most famous of Hippocratic writings, and for centuries was regarded as the sum of all medical knowledge. "Life is short, and the art long; the occasion fleeting; the experience fallacious, and judgment difficult." "In persons who cough up frothy blood, the discharge of it comes from the lungs." "Diseases about the kidneys and bladder are cured with difficulty in old men." "It is better not to apply any treatment in cases of occult cancer; for, if treated, the patients die quickly; but if not treated, they hold out for a long time."

For a long time the courts of the Orient chose



their personal physicians from Cos and the school of Hippocrates. One of the Cos physicians saved the life of Alexander the Great by extracting an arrow from his body, and another transmitted to the great library in Alexandria many medical books and writings.

### **The Canon of Avicenna**

Mohammed (570-632 A.D.) founded the commonwealth of Islam in 622 A.D., and a century later, his followers had conquered half of the then known world. He created classic Arabic by writing the Koran for his disciples (much as Martin Luther, centuries later, established high German by his translation of the Bible.) Arabic soon became to the East what Latin and Greek had become to the West—the language of literature and of the arts and sciences, also the language of learned men in their writings and communications.

Avicenna represented the epitome of Arabic culture and learning. He lived from 980-1037 A.D. He was eminent as a physician, philosopher, scientist, statesman and poet. Italy produced such a genius in Leonardo, Germany had such a mind in Goethe. Avicenna was born in Persia, learned the Koran by heart by 10, then began to study law, later mathematics, physics and philosophy. When 16 he began the study of medicine. Our remarks will be limited to his accomplishments as a physician. His Canon, containing over 1,000,000 words, codified all existing medical knowledge — and was required textbook at the University of Vienna 500 years later.

He attempted to write an all-embracing book on medicine following the exact rules of logic and attempting to fit each bit of anatomy, physiology, diagnosis and treatment into its proper niche with mathematical accuracy. There were imperfections because the foundation of anatomy and physiology was faulty — dissection being forbidden to Islamic physicians. He depended, therefore, on the writings of the Greeks for anatomy, and of Erasistratos and Galen for physiology. However, his diagnosis and treatment were thorough and logical. The Canon was translated into Latin in the 12th century and lasted for centuries. The elevation of the book to the heights of infallibility led later students to feel that this work exerted an unfortunate influence on medicine. Infallibility in sciences is incompatible with progress.

### **De Humanis Corporis Fabrica**

Andreas Vesalius (1514-1563 A.D.) was the

dominant figure in the field of anatomy of the Renaissance. He studied medicine in Paris where his teachers Sylvius and Guinterius followed Galen's anatomy. He returned to Louvain, Belgium where he established public dissections, went on to Venice where he met his countryman Johann van Calcar, an artist who was studying with Titian. Calcar later became famous as an artist and illustrated Vesalius' works (Fabrica). Vesalius' *Tabulae Anatomicae Sex* appeared in 1538 A.D., the year after his graduation from Padua. This was extraordinary work, but many Galenical errors persisted. He dissected and lectured constantly the next 5 years. His *De Humanis Corporis Fabrica* (On the fabric of the human body) was published in 1543 A.D. in Basel, Switzerland by Oporinus. His *Epitome* also appeared in 1543 A.D. A second edition of the *Fabrica* appeared in 1555 A.D.

The *Fabrica* is one of the truly great landmarks in the history of man's progress. Some have described it as the greatest book in the history of medicine because it described the anatomy of the human body with accuracy for the first time. It should be listed among the decisive books in medical progress. The impact of the *Fabrica* was felt throughout the medical world upsetting much of what had been accepted for more than 1300 years after the death of Galen. Vesalius became court physician to Emperor Charles V in 1544 and spent the rest of his life with Charles and his armies in court or on the battle fields.

### **De Motu Cordis**

William Harvey (1578-1657) is justly celebrated as the discoverer of the circulation of blood. Harvey, by experiment, proved his theory, whereas others, in armchair speculations, had theorized about the circulation. Harvey's work revived experimental physiology, a dormant science since the death of its founder, Galen, more than 1400 years previously.

He begins by emphasizing that it is necessary to observe the beating hearts of animals in order to understand the circulation. He then elaborates: "When the left ventricle stops beating the pulsations in the arteries cease." "First the auricle contracts and this forces the abundant blood it contains into the ventricle. This being filled, the heart raises itself, makes its fibers tense, contracts, and beats. By this beat it at once ejects into the arteries the blood received from the



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auricle; the right ventricle sending its blood to the lungs through the vessel called vena arteriosa (Pulmonary artery), — the left ventricle sending blood to the aorta and to the rest of the body through the arteries.”

He quotes the work of his old master Fabrizio on the valves of the veins to reinforce his views that the veins carry blood to the heart, — and agrees with “Colombo, the great anatomist, that blood passes from the right ventricle, through the lungs into the left auricle.”

Robert Boyle asked Harvey how he came to think of the circulation of blood. Harvey said, “Since the blood could not, because of interposing valves, be sent by the veins to the limbs, it should be sent through the arteries, and return through the veins, whose valves did not oppose its course that way.”

**D**E MOTU CORDIS was received with varying reactions, — ignored, battled, supported. Joannes Riolan, professor of anatomy at Paris, was the most determined opponent. John Aubrey in his *Brief Lives* wrote of Harvey: “I have heard him say that after his book on the circulation of the blood came out, that he fell mightily in his practice, and that it was believed by the vulgar that he was crack-brained, and all physicians were against his position and envied him. With much ado at last in about 20 or 30 years time, it was received in all the universities in the world.” “All his profession would allow him to be an excellent anatomist, but I never heard of any that admired his therapeutique way. I knew several practitioners in London that would not have given anything for one of his prescriptions.” Harvey was physician and friend of Charles I who ordered him to examine the “witches of Lancashire” who had been condemned to death. He was largely instrumental in obtaining their pardon. It is impossible to exaggerate the importance of Harvey’s great discovery — without which physiology could not have advanced and clinical medicine could not have become intelligible.

### **Inventum Novum**

Leopold Auenbrugger (1722-1809), was highly successful in practice in Vienna. A lover of music, he wrote the libretto for the comic opera, “The Chimney Sweep”.

His little book of 95 pages was known as *Inventum Novum* and was published in 1761 A.D.

It described a new method of physical diagnosis, —percussion, and was based on seven years of clinical trial with the method. It may have been stimulated by boyhood experiences of learning to estimate the amount of wine in casks by tapping on the end of the cask in his father’s inn, because he mentioned the method of tapping on the end of the cask. He described the technique of percussion and also the findings in health and disease.

His teachers and contemporaries ignored this discovery for the most part, and it was not until 47 years later when Jean Corvisart, a famous French physician, found a reference to Auenbrugger’s discovery and published a French translation of *Inventum Novum*. This made Auenbrugger famous. He died the following year.

In 1761 A.D., the same year that produced the *Inventum Novum* of Auenbrugger, work in Padua was completed which was to prove itself to be another outstanding contribution to medicine of the 18th century and to the development of pathology.

### **The Seats and Causes of Diseases**

Giovanni Battista Morgagni (1682-1771) published the work that inscribed his name among the greatest in medicine and justly led him to be called “The Father of Pathology” when he was 79 years of age, ten years before his death.

His book *De sedibus, et causis morborum per anatomen indagatis* (The Seats and Causes of Diseases) marks the foundation of modern pathological anatomy. This work introduced anatomical thinking into pathology, localizing pathological lesions in definite organs. In it the author described almost every pathological lesion with which we are familiar today.

### **An Account of the Foxglove and Some of its Medicinal Uses**

William Withering (1741-1799) was a skilled botanist. He graduated from the Medical School in Edinburgh and practiced in Birmingham. His first work was *A Botanical Arrangement of All the Vegetables naturally growing in Great Britain*, 1766. Hearing of an old woman in Shropshire with a secret remedy for the cure of dropsy, he obtained the recipe and found 20 or more herbs in it, but found its active ingredient to be Foxglove. He began to use this, and after 10 years of experience published *An Account of the Foxglove and Some of its Medicinal Uses*,



1785, with a beautiful colored plate of the *Digitalis purpurea*. *Digitalis*, the active ingredient in Foxglove, remains a sheet anchor in the treatment of cardiac disease today.

### **An Inquiry into Causes and Effects of the Variolae Vaccinae**

Edward Jenner (1749-1823) was one of John Hunter's favorite pupils. He was born in 1749, educated in the classics and apprenticed to a physician near Bristol for six years. During this apprenticeship, a young woman came for medical advice, and when small pox was mentioned she exclaimed, "I cannot take it, for I have had cow-pox". He never forgot this. He went to London and became a pupil of John Hunter, (then 42), living in his home for two years. He tired of London and began practice in Berkely, experimenting on the side on hedge hogs, foxes, lizards, birds, and made observations on the cuckoo. These led to his election as Fellow in the Royal Society of London.

In 1796, cow-pox appeared on a farm near Berkely. Jenner obtained some pus from a sore on a dairy maid's hand and inserted it by means of superficial incisions in the arm of James Phipps, a healthy boy of eight. The inoculation succeeded, the boy developed a small pustular sore, scab, and scar. Six weeks later Jenner inoculated him with variolous lymph, but no small pox followed.

The next year he inoculated three more patients. He submitted a paper on the subject to the Council of the Royal Society, who returned it to him with the "friendly admonition that as he had gained some reputation by his former papers it was not advisable to present this one". He published it himself in 1798, *The Inquiry into the Causes and Effects of the Variolae Vaccinae*, in London. Jenner's discovery aroused much controversy in London. Doctor Benjamin Waterhouse of Cambridge, Massachusetts enthusiastically supported him in America and so did Thomas Jefferson, the President. Napoleon ordered his soldiers vaccinated. The Empress of Russia urged her subjects to be vaccinated. Soon the method spread generally.

Jenner's discovery ranks among the greatest discoveries in medicine. The disfigurement from small pox, a commonplace occurrence in the 18th century, has become a rarity. In countries enforcing compulsory vaccination, the death rate from small pox approaches zero.

### **De l'auscultation mediate**

René Theophile Laennec (1781-1826) made two major contributions:

1. The invention of the stethoscope in 1816, and
2. His treatise *De l'auscultation mediate* in 1819.

His work summed up 18 years of medical experience, and three years of use of the stethoscope in diseases of the lungs and heart. He was obliged to create a number of new words for the sounds he heard (rales, bronchophony, pectoriloquy, egophony). His work was immediately accepted. A second edition appeared in 1826 — one of the outstanding books of medical history. He died of overwork and tuberculosis at 45.

### **Cellularpathologie**

Rudolf Virchow (1821-1902) was the creator of the modern science of pathology. He is considered to have been the outstanding physician of his generation, ranking in history with Hippocrates, Galen, Morgagni, Auenbrugger, and Laennec. Among his predecessors he was rivalled only by Morgagni, but by none of his successors. Virchow, with the publication in 1858 of his *Cellularpathologie*, brings us into the modern epoch of medicine. *Cellularpathologie* is to be considered as one of the important books in medicine. Morgagni pointed out the importance of the pathology of an organ as the seat of disease, Bichat, the importance of tissues, and Virchow now pointed out the fundamental role of the cell. He described many tumors and named them for the first time. His later studies on embolism, thrombosis, and on endocarditis were also epochal. He edited Virchow's Archives, and also served in the Reichstag as an opponent of Bismark from 1880-1893.

### **Principles and Practice of Medicine**

William Osler (1849-1920) was one of the most influential physicians of his generation. He received his degree from the medical school of McGill University in Montreal in 1872, spent two years of postgraduate study in London, Berlin, Leipzig and Vienna, and then returned to Montreal. At the age of 26 he became Professor of the "Institutes of Medicine" (Physiology) at McGill University and pathologist to the Montreal General Hospital. Osler became the Professor of Clinical Medicine at the University of Pennsylvania in 1884 and was called to Balti-



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more, upon the recommendation of Welch, as Professor of Medicine in the newly founded Johns Hopkins Hospital in 1889, and School of Medicine when it formally opened in 1893.

He introduced a combination of the English and German methods of medical teaching, which made his clinic the outstanding one of his period on the American continent and a model which was widely imitated. Osler said that the fate of any institution "lies in the men who work in its halls, and in the ideals which they cherish and teach." His example had profound influence on the Hopkins and medicine. In 1887, he began writing his famous textbook on medicine. Five years later, in 1892, Osler's *Principles and Practices of Medicine* was published. This masterpiece was comprehensive, accurate, lucid, charming, and warm in its day, and also influenced medical education and the public by the inspiration it provided Rev. F. T. Gates in 1897. Rev. Gates and the story of the Rockefeller Foundation and Institute for Medical Research are linked to Osler's text.

**T**HE Rockefeller Institute for Medical Research was created in New York City in 1901. Osler's remarkable text on the "Principles and Practice of Medicine", published in 1892, is generally given credit for providing the stimulus for such an institution in an indirect way. The text clearly pointed out that few medical diseases had specific treatments at that time. The book was read by Rev. Frederick T. Gates, financial

adviser to John D. Rockefeller, during his summer vacation in 1897. Gates persuaded Mr. Rockefeller to establish an institute for medical research. The institute was planned largely by Dr. Welch of Hopkins who remained as Chairman of the Scientific Advisory Board for many years. One of his pupils, Simon Flexner, became the first Director. This institute became to the public and to the medical profession alike what the Pasteur Institute represented to the people and to the scientists of France. It led the way for other American philanthropists to establish Foundations for charitable purposes, and to support medical education and research. The Rockefeller Institute has made notable contributions in chemistry, infectious diseases, parasitology, tumor research, and virus diseases, and has provided a number of Nobel prize winners.

### Conclusions

For those of you who are pre-medical students and for those of us who have pursued the medical career somewhat longer, the art and science of medicine have deep roots indeed. Osler reminds us that the fate of any institution "lies in the men who work in its halls, and in the ideals which they cherish and teach." Challenges for accomplishment in service, teaching and research in Medicine are never-ending.

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## RIGHT WING EXTREMIST?

I believe in the United States of America, as a government of the people, for the people: whose just powers are derived from the consent of the governed: a democracy in a republic; a sovereign nation, one and inseparable: established upon those principles of freedom, equality, justice, and humanity for which American patriots sacrificed their lives and fortunes.

I therefore believe it is my duty to my country to love it, to support its Constitution, to obey its laws, to respect its flag, and to defend it against all enemies.

—WILLIAM TYLER PAGE

*Adopted by an Act of Congress, April 16, 1918*



# The Use of Alpha-Chymotrypsin in the Middle Ear In Muroid Otitis Media (Glue Ear)

by Douglas W. Frerichs, M.D.

Certain cases of chronic muroid otitis do not respond readily to conventional treatment. In "glue ear" the exudate is so tenacious and elastic that it defies mechanical removal. A mucolytic agent, alpha-chymotrypsin, was instilled into the middle ears through myringotomy openings in 19 ears. The viscosity of the secretion was reduced and aspiration was then facilitated.

## INTRODUCTION

THE management of chronic muroid otitis media, (glue ear), has been a problem for the otologist that has been unaided by antibiotics. In fact, the conservative treatment of acute purulent and acute catarrhal otitis media with antibiotics and without a myringotomy, though often curative, may leave the patient with unresolved muroid secretions in the middle ear. These ears not only have a resultant conductive hearing loss, but a predisposition for recurrent infections.

The etiologic factors in muroid otitis media are related to eustachian tube obstruction and unresolved middle ear infections. Hypertrophied adenoids, residual eustachian lymphoid tissue, allergic rhinitis, and acute or chronic suppurative rhino-sinusitis seem to contribute to this condition.

Conventional treatment has included adenoidectomy and adeno-tonsillectomy, eradication of nasal and sinus infection, treatment of nasal allergy, irradiation of eustachian tubes for residual lymphoid tissue, myringotomy with aspiration of secretions, and insufflation of the eustachian tubes.

The condition seems to be most common in children under ten years of age, but occasionally is found in adults. It is recognized by a dull, lustreless ear drum which may be in a normal position, bulging slightly, or retracted. A conductive deafness of from fifteen to thirty decibels is present. The "glue ear" is differentiated from serous or purulent otitis by the thick, grossly non-purulent, tenacious, muroid character of the secretion, which has an adhesive quality often

defying aspiration. At times, it may be teased out of a myringotomy incision with a suction tip and stretched the entire length of the ear canal, only to break free from the aspirator tip and snap back into the middle ear, almost like a rubber band.

The diagnosis of muroid otitis media in the cases reported in this article was made with clinical findings, and cellular study of the secretions was not done. According to Senturia's<sup>1</sup> classification of middle ear effusions, those effusions listed as mucopurulent and muroid would probably be included in the cases reported below.

For the past eight years, I have performed myringotomies on patients with serous or muroid otitis media at the same time that an adenoidectomy or an adeno-tonsillectomy is done. A routine posterior inferior quadrant myringotomy was done, and the middle ear is aspirated with a blunt number eighteen needle suction with a glass adapter to allow collection and visualization of the secretions.

This method has been effective in most cases, but with "glue ear", the tenacious character of the secretions makes aspiration difficult. Often two myringotomies, (beer can type), are necessary, or the initial myringotomy must be enlarged to admit a larger suction. I have, at times, wondered if the myringotomy opening would heal because of the large opening I had created in attempting to aspirate viscid secretions. The injection of sterile isotonic saline into the middle ear via a myringotomy was found to be useful to help flush out the middle ear and loosen up the tenacious secretions sufficiently to allow aspiration. However, this did not seem to materially affect the actual viscosity of the muroid secretions.

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**T**HE work of Gessert, Baumann, and Senturia<sup>2</sup> on the action of enzymes on middle ear effusions in vitro seemed to indicate that chymotrypsin is an effective lytic agent. It was thought that alpha-chymotrypsin, injected directly into the middle ear, might be of value in liquifying the mucoid secretions found in the "glue ear" syndrome. The fact that alpha-chymotrypsin had been used since 1957,<sup>3</sup> as an intraocular injection to facilitate zonulysis in cataract surgery, gave me some assurance that it would not be injurious to the middle ear. The work of Gessert et al and of Schwartz<sup>4</sup> indicated that alpha-chymotrypsin is effective as a proteolytic agent and, even in relatively weak dilutions, has the ability to disrupt polypeptide chains, and thus reduce the viscosity of the material.

### PROCEDURE

It was decided to use a refined form of alpha-chymotrypsin\* that had been prepared for intraocular injection. Only cases of "glue ear" were used in the test group. If the middle ear secretions were serous or purulent and easily aspirated via the myringotomy, they were not included in the series. If the secretions were mucoid and tenacious, 0.5cc to 1cc of alpha-chymotrypsin, one to five thousand dilution, was injected via a myringotomy opening with a No. 18 blunt needle. A period of ten minutes was allowed to elapse while attention was directed to the other ear, or to adeno-tonsillectomy. Following the ten minute interval, aspiration of the secretions through a No. 18 blunt needle seemed quick, easy and effective.

### COMMENT

The cases were carefully followed, and no reaction of the membrana tympani was noted. The myringotomies healed rapidly. Hearing improvement was often noted by the parents immediately after the child awakened. The post-operative audiograms were done four to six weeks after the surgery and revealed improved hearing in all ten patients, or, in nineteen ears. Nine patients had bilateral involvement and one, unilateral disease. It should be mentioned that an adenoidectomy or an adeno-tonsillectomy was done in nine patients. These procedures undoubtedly had some favorable effect on the hearing improvement. During the time this series of patients was being collected, Litton and McCabe<sup>5</sup> reported the use of alpha-chymotrypsin injected into the middle ear in thirty-one cases of "glue ear". Their

work indicated that the enzyme was both safe and effective. In their series, the alpha-chymotrypsin was injected via a needle without using subsequent aspiration.

In this series, a myringotomy was done in every case to confirm the diagnosis of "glue ear" and to observe any changes that occurred in the secretions ten minutes later when aspirated. In general, the viscosity of the secretions seemed diminished and aspiration was facilitated. In all cases, the middle ear was suctioned clear of all available mucous before the case was terminated.

### CONCLUSIONS

In this series of ten patients involving nineteen "glue ears", the age ranged from five to ten years. Only children that were cooperative for audiometric testing were used. The average decibel loss in the speech frequencies, (500, 1,000 and 2,000 cycles per second), for the group was twenty-two decibels for each ear. One of the ears had a ten decibel loss, and the remaining eighteen had losses of a conductive type between fifteen and thirty decibels in the speech range. The post-operative audiograms, four to six weeks later, revealed a return of hearing to eight decibels or better in every ear, and the average post-operative loss in the conversational range was two decibels. Thus, an average gain of twenty decibels occurred in each ear.

### SUMMARY

Nineteen "glue ears" in ten children were treated with a myringotomy, injection of alpha-chymotrypsin into the middle ear, and followed by the aspiration of the secretions from the middle ear. All ears showed improvement in hearing post-operatively. An adenoidectomy or an adeno-tonsillectomy was done in nine children. No unfavorable reactions occurred to the alpha-chymotrypsin injections. The children have been followed from sixteen to four months and no recurrence of "glue ear" has been noted.

It is believed that alpha-chymotrypsin, injected into the middle ear, is of definite value in the treatment of mucoid otitis media, (glue ear).

\*Zolyse - Alcon Laboratories, Inc.

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Stanley R. Friesen, M.D.

# Palliative Surgery and 'Second Look' Operations in the Conversion of Palliation to Cure

by

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This is an informative discussion of the problem facing any doctor who treats "incurable cancer," with some remarkable case presentations suggesting "cures."

THE term "palliative surgery" has a number of connotations. The usual meaning involves the use of operative procedures for the relief of symptoms in the patient with incurable cancer. It also may connote the use of procedures, operative and non-operative, for the prolongation of life. Another frequent usage applies to those operative excisions which fail to cure by virtue of the fact that the neoplastic growth has been incompletely removed.

The surgeon is involved in one way or another in the care of most patients having malignant lesions. His obligations range from simple biopsy to radical operative attempts to rid the patient of the neoplasm, and more recently he takes an active part in adjunctive therapy such as perfusion technics and other administrations of drugs, chemicals, and isotopes. Whatever his role in the management of patients having neoplastic processes, the surgeon must make assessments of both the physical and the psychological condition of his patients. He must make judgements balancing the risks against the probabilities of success of available treatment. Moreover, in

those instances when a cure does not seem possible, he must determine in his own mind if there are symptoms in his patient which require palliation, which symptoms require treatment, and the wisest means of accomplishing relief and extending life in relative comfort.

## The Surgeon's Attitude

It is important to realize that the surgeon's own attitude regarding palliation influences the likelihood of success of his attempts, and certainly the patient's response to his care. The surgeon who subscribes to the idea of predetermination in the prognosis of cancer growth and who attempts only halfheartedly to alter the course of the disease when cure is impossible will not usually provide the benefit which the patient seeks. On the other hand, if he takes an active part in offering a chance for the mitigation of symptoms, his patient usually will respond with interest, appreciation, and varying degrees of palliation.

## The Patient's Attitude

The first step towards palliation, as I see it, when a diagnosis of malignancy is suspected and later confirmed, is to establish a cooperative,

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considerate understanding between surgeon and patient. This requires that the patient know at least that the disease is malignant and that an intelligent effort will be made to cure the disease if at all possible, to arrest it, or to give palliation. By far the majority of patients with cancer have a high degree of suspicion regarding the diagnosis by the time they are hospitalized and as many expect to be told the truth. Not knowing is often more discomfiting than knowing. An experienced surgeon will realize that there is a time, a place, and a way to acquaint the patient with the nature of his disease without taking away his hope for the future. The patient wants *relief* of his symptoms and more *time* in comfort (palliation). Perhaps it is odd that most patients, even those whose faith assures them of eternal life after death, when given hope strive for each added day of life. St. Augustine, in the "Confessions", provides some enlightenment on this human trait when he reasons that "time is an extendedness of the past". The patient easily recalls a past of good health and desires more than anything an extension, not of the present but of that happy past, into the future. He wishes to be a mortal witness to the extension of his past hopes and aspirations into the future. William James, in his *Principles of Psychology*, stated that "the irreversible flow of time is not without the accompanied . . . awareness of change". The patient wishes to be aware of a change for the better.

Such desires of the patient for palliation are catalyzed by hope and inhibited by fear. Hope and fear are mutually antagonistic. In "An Essay Concerning Human Understanding", John Locke reminds us that "We . . . hope only in respect of pleasure; we . . . fear only in respect of pain ultimately." The surgeon, then, conversely, by the mere relief of pain and the quieting of fear, can create hope in the patient. This provision of hope thus is the second step towards palliation.

### The Family's Attitude

The family of the patient enter into the consideration of palliation in that occasionally and unwittingly they add to the psychological discomfort of the patient. The family, in their desire to withhold unpleasant information from the patient, who already is reasonably sure of the same information, fall into the plot of deceit. The patient as well may enter into the conspiracy of

duplicity, as is so poignantly illustrated in Tolstoy's "Death of Ivan Ilych". It is important that family and patient similarly understand the essential problems of management.

### Some Physical Principles of Palliation

The surgeon, when faced with the need for palliation in his patients, will do well to consider the mechanisms of the production of symptoms, so many of which are due to pressure alterations, and to the presence of edema and inflammation. Many malignant tumors of hollow viscera produce symptoms due to obstruction. A law of physics points out that obstruction or increased peripheral resistance in a tube in which there is flow will result in an increase in lateral pressure proximal to the obstruction. If the tube is distensible there will be distention, stretching of the surface (peritoneum), producing pain and even perforation. It is obvious that palliative procedures aimed at decompression by means of external vents (e.g., colostomy) or by means of by-passing anastomoses (e.g., gastro-enterostomy, ileo-colostomy, cholecysto-jejunostomy) will relieve the pain of obstruction when it is impossible or unwise to remove the obstructing lesion. The ancillary treatment of the edema and inflammation so often surrounding a malignant lesion by appropriate drugs and antibiotics sometimes can convert a lesion from a seemingly unresectable state to a removable one, and in this regard the adjuvant therapy of roentgen irradiation to a large bronchogenic carcinoma may accomplish a shrinkage to a resectable size. The removal of a lobe of a lung involved in infection peripheral to an obstructing bronchial carcinoma sometimes gives remarkable palliation.

Resection of primary gastric and intestinal lesions, when possible and safe, even in the presence of hepatic metastases, will likely give good palliation in terms of symptom relief and extension of survival. For instance, in gastric carcinoma with liver metastases, local resection of the primary lesion will result in an average survival time of 15 months as compared with a little over 5 months after gastrojejunostomy and 3½ months after enterostomy. In patients having palliative gastric resections for carcinoma without hepatic metastases but with incomplete removal (microscopic cells in line of resection) there is a silent interval, symptom free, of an average of 20 months.



Total gastrectomy for extensive carcinoma of the stomach should be reserved for those patients in whom a cure seems possible. On the other hand, total gastrectomy when done for metastatic islet cell tumor in the Zollinger-Ellison syndrome, can accomplish remarkable palliation of the ulcer symptoms resulting from gastric hypersecretion.

**P**ALLIATIVE procedures for metastatic breast and prostatic carcinoma are more numerous and varied than for many other carcinomas because of the apparent hormonal and endocrine influences. There probably is no other area in which combined therapeutic disciplines have more to offer.

In selected patients with selected neoplasms the chemotherapeutic agents may supplement the traditional methods of palliation. Caution should be directed to the indiscriminate use of such agents in the aged, in those with bone marrow metastases, and in those in whom the liver is largely replaced by metastases. The length of hospitalization may be increased with their use, and the morbidity sometimes associated with marrow depression in poorly selected patients will counteract whatever hope there may have been for palliation.

### The Role of the "Second Look" Procedure

There are patients in whom it is difficult to determine whether a resection has been curative or palliative. These patients are those in whom there has been no distant spread but pathological study of the resected specimen indicates that numerous lymph node metastases have occurred. If microscopic tumor has been left behind it will continue to grow until it may become visible and palpable upon re-exploration. In such patients a "second look" operation may be performed several months after primary resection, at a time when patients are symptom free and without discernible metastases on physical or X-ray examination. If metastatic nodes or implants are found and are removed, another exploratory procedure may be done after another interval of time, and repeated until no evidence of "recurrent" tumor is found. Carcinoma of the colon seems to lend itself to this type of plan, with 8 to 10 month intervals. The plan can be applied to other neoplasms but with less likelihood of success because of anatomical barriers.

This plan of re-operation has been of much benefit in a group of patients; a few representative cases are described here.

**J. H.**, a 29 year old white female, presented at operation on April 30, 1956, with familial polyposis of the entire colon and rectum, (Fig. 1), with a carcinoma of the rectosigmoid involving by direct extension the uterus and left ovary and regional lymph nodes. A sub-total colectomy with para-aortic node dissection and anastomosis of the ileum to the rectum was carried out. The uterus and left ovary were removed in continuity with the colon. After operation many polyps of the rectum were excised and fulgurated during proctoscopy, at intervals. Four months later a re-exploration was done, at which time there was found an enlarged right ovary, metastatic, with rupture, the peritoneal cavity containing fluid with grade V malignant cells on cytological examination, and two palpably enlarged lymph node metastases at the bifurcation of the left common iliac artery. A right oophorectomy with excision of the left iliac nodes and irrigation of the peritoneal cavity was carried out, with instillation of nitrogen mustard intraperitoneally and intravenously. It is interesting to note that no further polyps of the rectum developed after this time. Another second look operation was carried out six months later (February 19, 1957) at which time no evidence of neoplasm was found. She is well, without evidence of recurrence or polyps, almost seven years from the time of her first operation.

SECOND LOOK  
J.H. AGE 29  
CA. OF COLON AND POLYPOSIS



Figure 1.

**J.M.**, a 17 year old white male, presented at operation on July 28, 1961, with a large mass involving the left lobe of the liver, the left hemidiaphragm and its crura, with coeliac axis lymphadenopathy (Fig. 2). The lesion was thought to



SECOND LOOK  
J. M. AGE 17  
HEPATIC CARCINOMA

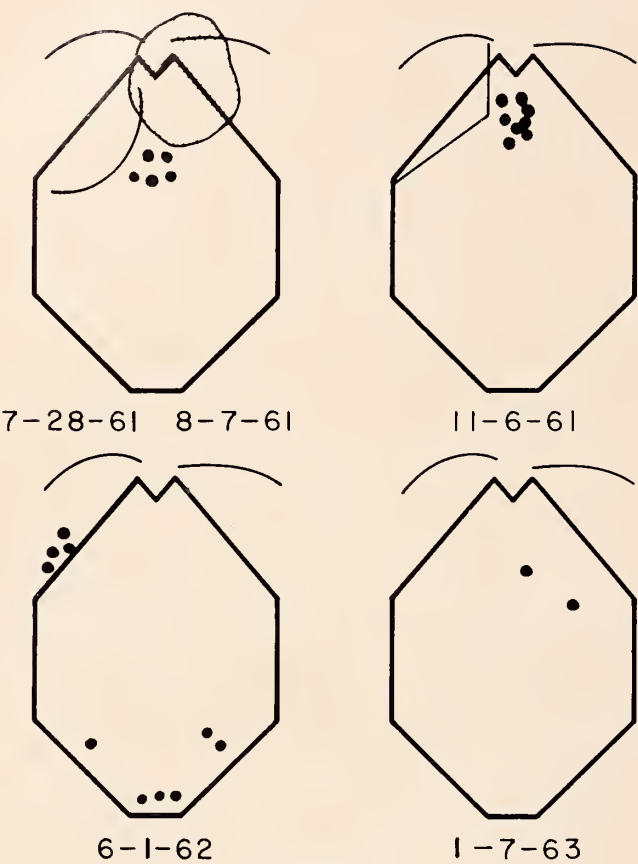


Figure 2.

SECOND LOOK  
B. D. AGE 63  
CARCINOMA OF COLON

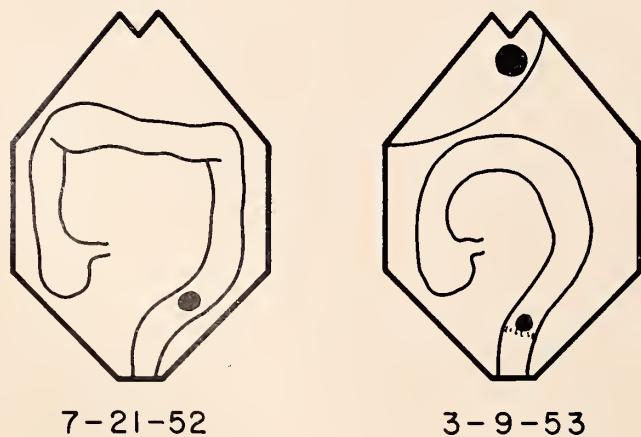


Figure 3.

be of the lymphoma type of tumor on frozen section and irradiation was planned. However, a biopsy taken at operation revealed it to be a primary hepatocarcinoma. Re-exploration under general hypothermia on August 7, 1961, allowed an excision of the left lobe of the liver and a full thickness portion of the left diaphragm and crura. Re-exploration on November 6, 1961, was done for the purpose of widely removing the known coeliac para-aortic lymph node metastases, which was done. No evidence of recurrent tumor at the diaphragm or liver margin was found. A second look procedure then was done after an interval of seven months (June 1, 1962), at which time peritoneal implants in the cul de sac, surface of the sigmoid colon and mesentery, the appendix and the right lateral parietal surface of the upper abdomen and right diaphragm were excised. Nitrogen mustard was administered intraperitoneally and intravenously. After another interval of seven months (January 7, 1963), re-exploration revealed only two sites of recurrence, one small (1 cm.) nodule in the omentum and one small (1.5 cm.) nodule in the abdominal incision, both of which were easily excised. The previous areas of peritoneal implants were free of tumor. The left lobe of the liver had regenerated. The patient continues to appear in excellent health and it seems that the surgeon is ahead of the disease for the first time in this patient. Another second look operation was planned after an interval of 8-10 months and was performed on September 30, 1963, at which time no evidence of tumor was found.

B.D., a 63 year old white female, was operated on July 21, 1952, at which time a sigmoidectomy was done for carcinoma of the sigmoid colon without visible metastases. (Fig. 3). In 7½ months a small recurrence at or just above the anastomotic line was noted and a re-exploration on March 9, 1953, revealed a 4 cm. single hepatic metastasis in the left lobe. A combined excision of the left colon and rectum with para-aortic dissection, colostomy, and partial left hepatic lobectomy, was done. This patient is now free of cancer over ten years from the time of her first resection. Her recurrences were of local and hematogenous spread.

C. F., a 47 year old white female, had a right radical mastectomy for carcinoma of the right breast with axillary metastases on July 18, 1958. On December 15, 1961, a left colectomy with



SECOND LOOK  
C.F. AGE 47  
CA. BREAST AND COLON

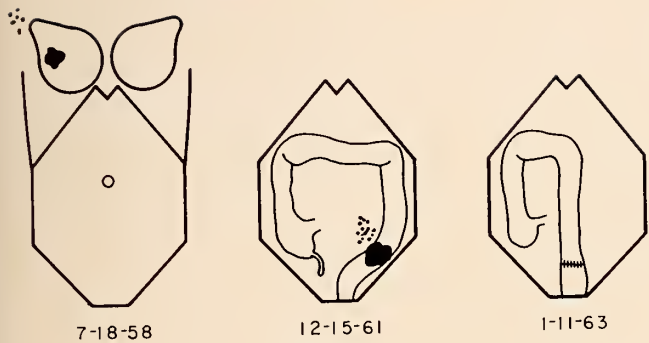


Figure 4.

para-aortic node dissection and anastomosis, with bilateral oophorectomy, was done for primary carcinoma of the lower sigmoid colon with lymph node metastases. (Fig. 4). A second look operation was done on January 11, 1963, at which time no tumor was found anywhere in the abdominal cavity. The patient has no evidence of recurrence from either malignancy. The principles of cancer surgery were followed in both resections, i.e., early ligation of the venous drainage, wide removal of the lymphatic spread and the primary lesion.

SECOND LOOK  
W.B. AGE 40  
CA. RECTUM BLADDER ILEUM



Figure 5.

W. B., a 40 year old white male, was seen first in July of 1950, with a history of having had a cecostomy for bowel obstruction nine months previously. At operation (July 14, 1950), a large malignant mass involving rectum, a loop of small intestine, and the dome of the bladder was removed en bloc by a combined approach. (Fig. 5). At re-exploration six months later (January 19, 1951) no evidence of recurrence was noted and the cecostomy was closed. Re-exploration during an incisional hernioplasty on January 20,

1954, also revealed no evidence of recurrence and the patient is well without disease over twelve years after first resected. This patient was able to purchase life insurance at standard rates after his first "second look" procedure.

J. N., a 43 year old white male, was first operated on in 1951 for carcinoma of the splenic flexure of the colon with reported hepatic metastases; apparently a segmental resection of the colon was done at that time. He was next seen six years later, presenting with a mass in the left upper quadrant. At operation on September 9, 1957, resection of the left colon, a loop of small intestine, the left kidney and the spleen was done (Fig. 6). There were no hepatic metastases. Following this, he refused a second look operation until October 14, 1960, at which time a nodule in the region of the left spermatic cord was palpable. Re-exploration on that date revealed three implants in the region of the renal fossa, one in the gastro-hepatic ligament, one

SECOND LOOK  
J. N. AGE 43  
COLON CARCINOMA

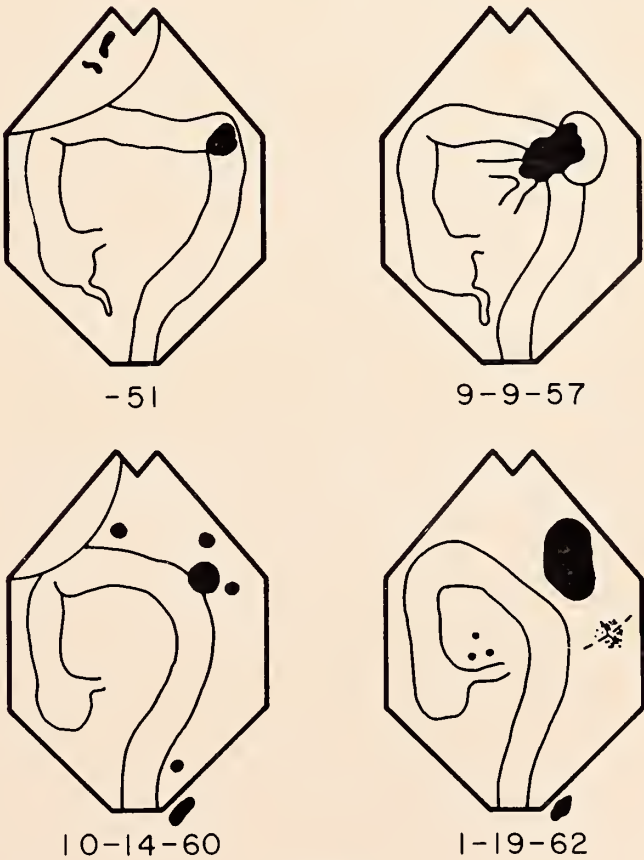


Figure 6.



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along the left ureter and one in the spermatic cord structures, all of which were removed. Intravenous nitrogen mustard was given. Another re-exploration was done on January 19, 1962 (15 months later), at which time recurrences in the renal fossa, spermatic cord area, and abdominal incision were removed. It was felt that the renal fossa recurrence was incompletely removed and cobalt X-ray therapy to this area was added. The patient appears well and is working but with disease twelve years following the first operation for carcinoma of the colon. This case demonstrates the course of a slow-growing neoplasm modified by repeated removal of tumor, which has produced considerable palliation in this patient, who has been able to keep working in comfort. The delay in re-exploration may account for failure to completely remove all recurrences.

H. D., a 33 year old female, first presented with acute large bowel obstruction due to carcinoma of the sigmoid colon and had staged procedures, i.e., right transverse colostomy on December 12, 1953, left colectomy on December 17, 1953, and closure of colostomy on December 28, 1953. (Fig. 7). There were regional lymph node metastases. A second look procedure was done on November 1, 1954, at which time no gross evidence of recurrent tumor was found, although the lymph nodes excised along the aorta contained microscopic tumor. An advised re-exploration was postponed until almost three years later, at which time she complained of severe pain in the low back and legs. On September 30, 1957, she was re-operated, at which time a recurrence occluding the bifurcation of the aorta was removed, with insertion of a bifurcation prosthesis. There also were implants along the left ureter and kidney and in the retro-duodenal area. She expired 10 months after this operation, but she was given remarkable relief of pain for nine months. This case is an example of palliation which may be accomplished by re-exploration without converting to a cure.

### Summary and Conclusions

Palliative surgery is best accomplished when a

SECOND LOOK  
H.D. AGE 33  
CA. RECTOSIGMOID



Figure 7.

cooperative understanding is present between surgeon and patient. Involved are the surgeon's attitude, the patient's knowledge of the problem, family cooperation, and an active program which allays fear by substituting hope. In well selected cases, second look procedures themselves may actually convert palliative efforts into curative situations. Failing a cure, the palliation of pain and the extension of life by re-exploration are ostensibly worth while to some patients. Through the use of re-exploration in search for and removal of tumor, a six year cure of "carcinomatosis" is illustrated and a ten year cure after partial hepatectomy for metastasis from carcinoma of the sigmoid are here reported.

Palliation is what patients desire if cure is not possible. Lucretius, in "The Nature of Things" writes: "Nature cries aloud for nothing else but that pain may be kept far sundered from the body, and that, withdrawn from care and fear, she may enjoy in mind the sense of pleasure."

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# Hypertrophic Osteoarthropathy

by

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Rudolf Kirschner, M.D.

Hypertrophic Osteoarthropathy is thought of as clubbing of the fingers and toes. It is frequently a very important clinical observation and should immediately trigger one's thinking toward thorough investigation of the patient, particularly the respiratory system. The most frequent occurrences of Hypertrophic Osteoarthropathy are associated with carcinoma of the lung which at the present time is probably the leading cancer in man. The author has brought out the historical background as well as the clinical features and roentgenological findings associated with this clinical sign. The exact nature of the lesion, as well as the cause, still remain somewhat obscure.

## Introduction

THE condition of hypertrophic osteoarthropathy and its very close relative, or possibly the identical twin, clubbing of the fingers and toes, was observed in biblical times it is thought, but the first definite reference to it is found in the writings of that immaculate and detailed observer, Hippocrates "all empyemata may be recognized by the following signs. First of all the fever does not intermit, but remitting a little during the day becomes more acute at night. Many fits of sweating occur. A desire to cough is aroused, but nothing is brought up to speak of. The eyes become sunken and the cheeks flushed. The fingernails become curved and the fingers warm, especially at their tips. Swelling which come and go are observed in the feet."<sup>1</sup> Although Hippocrates describes the condition of clubbing no attempt at explaining this phenomenon can be found in his writings. Probably the first modern evaluation of this condition is found in two separate papers, but at about the same time, namely those of the German physician, Bamberger<sup>2</sup> in 1899 and the other by the French physician Marie<sup>3</sup> in 1890. From that time on we are

confronted with hundreds of references to this condition. The number unfortunately bears no direct relationship to the illumination of this obscure phenomenon.

The confusion that exists is only more confirmed by the variety of names that have been attached to this condition. To quote only a few from a very long list — watch-glass nails, parrot-beak nails, drumstick nails, serpent's heads, clock pendulum fingers, essential dactylomegaly, hypertrophic acrodactylopathy, club fingers or clubbed fingers, toxigenic osteopoeriositis ossificans, periostitis, osteitis, osteosis hyperplastica, pulmonary hypertrophic osteoarthropathy. Eponyms were also applied to this condition and some of these are respectful recognitions of those men who did some investigative work of the symptoms, namely Hippocratic fingers, Marie's disease, Bamberger-Marie's disease,<sup>4</sup> Von Bamberger's disease, etc.

In contrast to the confusion that exists with respect to various aspects of this condition the definition is amazingly singular and in agreement with all authors or investigators of this phenomenon. Mendlowitz states that clubbing of the fingers is a usually painless, uniform enlargement confined to the terminal segment of

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the extremities.<sup>4</sup> Hypertrophic osteoarthropathy is an extension of the process of clubbing to more and more proximal parts of the extremities.

### Classification

By far the overwhelming majority of clubbing is acquired and usually bilateral. It can be associated with an amazing number of diverse diseases. It is indeed amazing that so many apparently completely unrelated diseases can produce the same symptom complex. Although, most usually it is associated with intrathoracic abnormalities of various kinds. The clubbing which can be traced to have its etiology in the chest is by far the most common type, although the mode of action as repeatedly stated is still not fully understood. Some authors feel so strongly about the association of clubbing of the fingers and chest disease that it is not infrequently that one is confronted with statements which are downright dogmatic, but on closer examination, careful thought should be allocated to these authors who appear to be dogmatic, but at the same time try to emphasize the importance and necessity of chest x-ray examination and bronchograms in every patient in whom clubbed fingers are noted on routine physical examination. A review of 299 patients who had lobectomies for bronchiectasis revealed complete descriptions of fingernails in only 129, of these, however 79% (103) were noted to have had clubbing of the fingers in varying degrees.<sup>5</sup> Clubbing of the fingers therefore should never be left as a mere notation on the chart of the physical examination, but further investigation with regard to intrathoracic abnormality and then with regard to further abnormalities elsewhere in the body should be sought for and a pathological basis for the clubbed fingers established.

**T**HE American literature is by far the most energetic in its emphasis of the search for pulmonic lesions in patients who present only clubbing as the only symptom. In the German literature one can find what may at first appear to be another dogmatic statement, namely—*Dass die Symptome der osteoarthropathie hypertrophante pneumique* (he uses the French term) *denen eines intrapulmonalen Prozesses erheblich vorangehen können, ist allgemein bekannt und daher ein Zeichen für die Frühdiagnostik eines möglichen Lungentumoren oder Bronchialkarzinomas* (That the symptom of pulmonary hyper-

trophic osteoarthropathy can be a preceeding one for intrapulmonary processes is well known and therefore a sign for the early diagnosis of a possible tumor of the lung or of bronchogenic carcinoma).<sup>6</sup> One case history might be of interest here and will be quoted only to serve as an illustrative example rather than as a diagnostic exercise. A 45-year old hospital attendant noticed painless swelling of the fingertips and stiffness of the knees about 18 months prior to admission. About nine months prior to admission the patient experienced exertional dyspnea, night sweats, weight loss but no anorexia. About one month prior to admission the patient developed a productive cough of whitish, non-bloody sputum. The chest film at this time showed a homogenous shadow of increased density with somewhat ill-defined margins in the axillary portion of the left upper lobe. X-rays repeated four and six weeks later showed a marked increase in the size of the lesion. An operation was performed and the anatomical diagnosis revealed adenocarcinoma of the lung. The patient died soon after the operation.<sup>7</sup>

Here then is a case where joint symptoms preceded any kind of chest symptoms by at least nine months. As no proof is ever possible one can merely wonder what the outcome of this case may have been had the patient presented himself to an alert physician on first noticing the swelling of the fingers and the decrease in function of his joints. Optimistic conjecture would have us think of a more favorable outcome.

**W**HEN talking about diseases of the chest and in particular those of the lung one almost automatically thinks of tuberculosis; it has almost become synonymous in the eye of the laity with lung disease. Paul deKruif has referred to it as the "White Scourge" and many other such picturesque or maybe gotesque synonyms have been applied to pulmonary tuberculosis. Being a lung disease of such reknown one naturally speculates on its relationship to clubbing and needless to say much has been written about it but oddly enough much diversity of opinion exists. For purposes of illustration let us again refer to the literature. Fischl states that Hippocrates noted clubbing of the fingers in phthisis,<sup>8</sup> but this writer can find no reference to clubbing with respect to phthisis in the words of Hippocrates but clubbing with respect to another pathological



condition is mentioned, namely empyema. The French physician Pigeaux wrote in 1832 — the secret and almost mysterious relationship between phthisis and the state of the nails evidently shows that the older physicians were inclined to attach importance to small details which even in the nineteenth century represent elements of good diagnosis.<sup>9</sup> The Henry Phipps Institute in Philadelphia reported clubbing of 21% in a series of 3,551 tuberculosis patients, whereas Kline reported only 11% in a smaller series of 100 tuberculosis patients. Poppe reports 25% of cases of clubbing in pulmonary tuberculosis particularly in the more advanced stages of the disease.<sup>5</sup> This latter statement is of great interest inasmuch as emphasis is put on the fact that the disease is far-advanced when clubbing is evident. Poppe states further that clubbing is also noted frequently in fibroid tuberculosis in which cavitation is present, and in these cases it is undoubtedly the cavitation and not the tuberculosis which is responsible for the clubbing.<sup>10</sup> One must of course assume almost out of necessity that cavitation in tuberculosis is almost synonymous with far advanced disease. Then again we get those reports that tend to be completely the other extreme and we find such statements as — pulmonary hypertrophic osteoarthropathy is extraordinarily rare in pulmonary tuberculosis, except when chronic fibroid phthisis is complicated by bronchiectasis and pulmonary suppuration.<sup>11</sup> Gottlieb draws special attention to the fact that hypertrophic pulmonary osteoarthropathy is often associated with chronic pulmonary disease but infrequently with chronic pulmonary tuberculosis.<sup>12</sup> There appears to be more tendency towards the assumption that clubbing is due to secondary involvement of the lung tissue rather than to tuberculosis per se.

**A**LTHOUGH intrathoracic abnormalities being the overwhelming factor as the causative agent of clubbing there are many other conditions which bring about the same phenomenon. G. E. French states — it has also been seen in valvular and congenital heart disease.<sup>13</sup> The heart is probably the next most incriminated organ with association of clubbing but by far not the only one. Thompson gives a long list in which he mentions the occurrence of hypertrophic osteoarthropathy in such diseases as regional enteritis, carcinoma of the colon, pyloric obstruction, ascariasis, Hanot cirrhosis, rickets, syngo-

myelia as well as hereditary and traumatic causes.<sup>4</sup> When the list begins to assume such vast proportion one begins to conjecture if this phenomenon is not merely just another one of the many generalized responses to disease or stress such as fever, anorexia, paleness, etc.

To make this whole picture somewhat more enigmatic one must now consider such situations where no disease entity is demonstrable. One is thus faced with two other major considerations, namely that of hereditary clubbing and that wastebasket of all puzzles, namely the so-called "idiopathic" type of clubbing. Camp and Scanlan in a rather lengthy and detailed discussion mentioned that five cases of clubbing unassociated with primary disease are reported by the Mayo Clinic,<sup>15</sup> and twenty other cases throughout the rest of the literature. The author goes on to state that hypertrophic osteoarthropathy can and does occur in the absence of primary disease or of Mendelian dominant heredity, but there appears to be a constitutional predisposition which accounts for familial tendencies and variance in individual's susceptibility to hypertrophic osteoarthropathy.<sup>26</sup> Locke, on the other hand, states quite definitely that hypertrophic osteoarthropathy is always a secondary disease and the fact that no obvious manifestation of primary disease is present is inherent in the observer's shortcomings.<sup>17</sup> Logue who quotes freely from many of his colleagues states that hereditary predisposition is a prime causative factor in the development of this disease (clubbing) because there is a familial involvement in about 60% of the reported cases.<sup>18</sup> The hereditary form of clubbing is that type which seems to differ somewhat from the acquired type and Mendlowitz has found evidence of increased blood flow in the fingertips in patients with all types of clubbing except the hereditary form. Thus we are faced with more unsolved problems which leave the road to exploration wide open to those who are interested in research.

### Clinical Features

A. Unless the observer entertains a high index of suspicion early clubbing will go unnoticed. The development appears to be insidious with at first only soft tissue changes, confined to the fingers and toes and typically osteal procedence to the lower end of the long bones of the extremities. It is, however, usually first seen in



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the thumb and index finger and subsequently spreads to involve all phalanges.<sup>14</sup> Onset of clubbing can occur at any age, the sex distribution depends on that of the underlying disease. The changes may take years to develop or more rarely they may appear within one week of the onset of the underlying disease.<sup>4</sup>

B. Clubbing is rarely accompanied by any subjective symptoms, rarely may the patient experience warmth, increased sweating, burning, increased growth of fingernails. There is also often increased resilience of the nails, increased longitudinal ridging, thickening of the nail beds, irregular pigmentation rarely, decreased lunula, rarely chronic paronychia. The skin over the base of the nail is flushed, a cyanotic flush of the nails may be present, later dorsiflexion of the distal phalanges with hyperextensibility of the distal phalangeal joints may be brought about. Clubbing of the toes develops always *pari passu* with clubbing of the fingers.

The pathological process begins at the nail root, just beyond the interphalangeal joint, as a hard transverse ridge on the dorsal aspect of the digit, and the underlying skin is very smooth and shiny. The longitudinal ridges of the nail often tend to be prominent and the nail may be quite brittle, in fact there is one reported case of complete nail necrosis. There is an increased rate of nail and cuticle growth and hangnails and acute paronychia are commonly observed. Early there is a vascular turgescence of the nail bed with first a hyper-pink tint to the nail bed with subsequently a lilac to cyanotic shading as the clubbing progresses. The cyanosis appears more rapidly when the fingers are cooled.<sup>19</sup> Subsequently, the base of the nail becomes elevated so that an outline may be seen beneath the skin and in far advanced clubbing, the nail floats and can be rocked back and forth in its bed. In cases of long standing the fingers may show hyper-extensibility of the terminal phalanx.<sup>20</sup> It must be remembered that muscular wasting frequently accentuates the clubbing. It is the "profile" of the nail which is so important, and the angle of that profile is the basic element in a correct diagnosis. Normally the angle of the nail with the finger is  $160^\circ$  and regardless of the deformities of the nail bed itself, curving, spatulation, etc., it is solely a disturbance of this angle on which the diagnosis of clubbing, early or late, rests; so

that any attempt to diagnose early clubbing this angle must be distorted to more than  $160^\circ$  to provide positive proof of osteoarthropathic change. An occasional case in which clubbing or hypertrophic osteoarthropathy develops very rapidly the pains in the extremities may be quite severe, and may precede x-ray changes in the bones. This disease may hence be mistaken for rheumatoid arthritis or osteoarthritis, especially in cases in which hypertrophic osteoarthropathy is the first manifestations of a silent pulmonary condition. This acute form is seen sometimes in children, but is also occasionally observed in adults. Spontaneous fractures are not uncommon, presumably because of the extreme osteoporosis in some cases. There is usually no increase in the length of the bones in adults, in children there appears to be but this is difficult to prove because of individual variability. The joints in hypertrophic osteoarthropathy may develop moderate effusions and some limitation of motion, in advanced cases ankylosis may result. Due to increase in size and weight awkwardness in gait and clumsiness in the movement of the hands and fingers results.

C. It is characteristic of both clubbing and hypertrophic osteoarthropathy to wax and wane with the activity of the underlying disease and to completely disappear with the cure of the underlying disease. As this increase, decrease, and disappearance of clubbing corresponds so closely with the underlying disease one can say: clubbing may be the barometer of the underlying disease and may increase and decrease several times with exacerbations and remissions of the disease.

## IV. Roentgenology

In the earliest stages of clubbing there may be no x-ray changes whatsoever in the terminal phalanges. In the more advanced cases there may be merely increased flare of the ungual process of the terminal phalanx. As the disease advances however, atrophic changes may develop in the terminal phalanx, ranging from simple osteoporosis to complete resorption of several or all of the end phalanges.

The bones involved earliest in hypertrophic osteoarthropathy are tibiae, fibulae, radii, ulnae, femora, humeri, metacarpals and metatarsals and later phalanges clavicles and pelvis may be affected. The tarsals, carpals, vertebrae, ribs and scapulae are rarely and the mandible and the skull al-



most never involved. At first new formed periosteal bone is seen along the shafts of the long bones. Later progressive osteoporosis of the cancellous portion and thinning of the cortex of the original bone, eventually osteoporosis of the new formed periosteal bone may also be seen. Tree-trunk layering of new formed periosteal bone may be observed by x-ray in cases of exacerbation and remission of the underlying disease.

### Pathology

A. The pathological study and in particular the histopathological study of clubbed fingers is an extremely difficult task, inasmuch as it must out of necessity be done on "dead tissue." When materials for studies are thus obtained postmortem, it is impossible to exclude terminal and postmortem changes. "Clubbing" may disappear when the specimen is subjected to technical processes. Various reports are, of course, available but the difficulties encountered must be kept in mind in each case.

B. Clubbing is characterized by increased proliferation of all tissues of the fingertips, most apparent in the fibrous elastic tissue of the nail bed, although it also takes place in the fatty connective tissue of the balls of the fingers. There is also dilatation and increased thickening of the walls of the small blood vessels of the fingertip as well as new formation of capillaries. There is an increase in the area of the nail and skin corresponding with the increase in volume of the underlying tissue and increase in thickness of epidermal tissue and increase in thickness of periosteum and ungual process. In the very advanced cases complete resorption of the bone may take place but no histological studies are available.

### Pathogenesis — Animal Experiments

It is interesting to note that clubbing and/or hypertrophic osteoarthropathy have been reported to occur in animals as a disease entity, whether primary or secondary is not stated, but the fact that this phenomenon does occur in animals opens a channel for experimentation. Wissing and Weiss state that clubbing can occur in lions, horses, cows, hens, dogs, particularly in the latter species, although experimentation with these animals has not been quite so successful.<sup>21</sup> Several researchers have experimentally caused pathological conditions of the lung in animals and had hoped to produce clubbing but none of the experiments produced the de-

sired effect. Mendlowitz and Leslic anastomosed the left pulmonary artery to the left auricular appendages in four dogs, one of these four developed hypertrophic osteoarthropathy while three did not.<sup>22</sup> It is doubtful that such a small series and then only one positive result could be considered statistically significant. One is justified in saying, I believe, that no satisfactory animal experiments are available which can prove the etiological factors of this disease.

### VII. Pathogenesis — Clinical Physiology

Most methods of endeavor presented such technical difficulties that they had to be abandoned, those that were not rejected in their infancy became so cumbersome and awkward to use that too many errors were introduced, and thus again their use was finally discontinued. A few fairly reliable methods of investigations were left but even these must be viewed with extreme caution.

1. Capillaroscopy and skin temperature measurements, although at first very promising, had to be abandoned due to technical difficulties.

2. Plethysmography and calorimetry appear to coincide in general, although an occasional difference is noted. The latter mode of investigation revealed that the blood flow per square centimeter of fingertip after release of sympathetic tone, was found to be abnormally high in symmetrically clubbed fingers. In cases of lung abscesses in which the clubbing receded at operation, the blood flow receded to within normal limits.

3. Arterial, venous and capillary blood pressure measurements are now generally accepted to be within normal limits in uncomplicated clubbing. (The antecubital vein was used for the venous pressure and the brachial artery for the arterial pressure.) Early measurements done in 1927 by Roncato<sup>23</sup> have since been definitely proven to be erroneous, due to the inadequate methods of measurements.

4. Brachial-digital arterial pressure gradients in symmetrical clubbing secondary to diseases of the heart, lung and intestines were found to be less than normal. This was especially the case after the release of sympathetic tone.

No conclusions are drawn here from the above information, they are only presented for the sake of completeness.

### VIII. Pathogenesis — Theories

The fact that so many theories with regard



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to the pathogenesis of this condition exist points to the inevitable conclusion that the cause is unknown.

**Trophic:** Laennec and many of his contemporaries held a rather simple view and stated that clubbing was merely due to emaciation which affected the proximal more than the distal phalanges.<sup>24</sup>

**Circulatory:** This theory, probably first advanced by Pigeaux in 1832 stressed the fact that alterations of circulation of the blood were responsible for clubbing. Other observers have followed this trend of thinking and Wilson in 1952 bases his theory on the work of Mendlowitz and goes on to state that the demonstration of a reduction of the circulation to the fingers which led to regression of the clubbing was of prime importance. The regression of clubbing seen after successful treatment of the underlying intrathoracic disease was also associated with a decrease in blood flow. In spite of the large blood flow clubbed fingers do not exhibit more conspicuous capillary pulsation than normal fingers at ordinary room temperature as would be expected if the increased blood flow was passing through dilated arterioles in the more superficial parts of the skin. It thus seems possible that the excess of blood passing through the fingertips is largely directed through anastomosis. The passage of blood directly into the venous plexus may be responsible for the proliferative changes characteristic of clubbing. Mendlowitz, as already stated was one of the chief proponents of this theory, but he also apparently lends a sympathetic ear to other theories most of which are stated here, and he admits freely that the definite answer has not yet been found.

**Toxic Infections:** At the time of Marie and Bamberger, bacteriology was making itself felt with much vigor and the advent of this assertion caused many observers to look for the answer of clubbing in the field of bacteriology. Koch had already demonstrated the causative agent of tuberculosis and it was not too long before the tubercle bacillus was incriminated as the etiological factor of clubbing. This theory had to be discarded soon because many cases of clubbing were found which were free of any acid fast bacilli. A new, still toxic theory developed, namely that circulating toxins acted on susceptible capillaries, but it soon became

evident that this theory was also inadequate because no toxins were demonstrable in a large number of cases. In spite of the inability to demonstrate toxins the toxic theory was a slow one to be abandoned and some authors made attempts to combine a theory of toxic mechanical stasis which was caused by circulating toxins and due to this stasis hypertrophy occurred, but lack of toxins and capillaroscopic studies consistently failed to uphold this theory and consequently this too had to be discarded.

**Anoxia:** Springthorpe and others state that clubbing was due to local or arterial anoxemia.<sup>25</sup> Campbell et al came out much later with a refined theory, but it was still one that was based on anoxia. These authors postulated that the transference of oxygen from the blood is dependent upon the oxygen tension in the blood being less effective where the circulation is slow as it is in the hands and the feet. This decrease in oxygen was brought about by faulty aeration of the blood which passes through the lungs, this slowed circulation with its decreased oxygen tension causing toxemia, which leads to edema, and thus increase in size and so to clubbing. What causes the decreased oxygenation in the lungs is not stated, however. These theories soon broke down because they failed to explain hereditary clubbing, unilateral clubbing as well as the fact why uncomplicated methemoglobinemia or severe anemia did not produce clubbing. The theory that there may be local anoxia does fail to explain the absence of clubbing in most cases of Raynaud's disease or other diseases of peripheral arteries.

**Endocrine:** There suddenly occurred a swing from the absence of something to the presence of something, but this time it was not a toxic substance, but a hormonal one. The opinions came fast and were manifold. Fried was the first to suggest that a hormonal imbalance between lungs and pituitary might result in hypertrophic pulmonary osteoarthropathy. He gives an analysis of four cases, but admits the deficiency of the study because of its small number. In three cases of carcinoma of the lung, Fried revealed hyperplasia of the eosinophilic cells of the anterior lobe of the pituitary and the fourth showed hirsutism at death, but no autopsy was done. He further goes on to mention and refers to Fort's work as to the possible extra respiratory function of the lungs as having



a role in the metabolism of lipids.<sup>9</sup> By the same token many authors have credited the lung per se with various endocrine functions. Bloom points out an interesting observation for the defense of the endocrine approach and emphasizes the common characteristics of three syndromes which may be confused clinically, viz-acromegaly, pachyperiostitis of Touraine and Galle and hypertrophic pulmonary osteoarthropathy.<sup>26</sup> The first condition is of definite endocrine origin, the second very often considered of endocrine origin, and the third is as yet unknown.

**Miscellaneous:** No classification of anything is ever complete it seems without the melting pot of "miscellaneous." There appears, too, a whole waste-basket full of theories such as absorption of toxins from the digestive tract, almost all endocrine glands have been mentioned at one time or another, the nervous system has been incriminated, particularly the autonomic division, dietary deficiencies have been mentioned, and many other obscure and what appear to be rather far-fetched theories have been advocated at one time or another.

## Conclusion

There is no satisfactory explanation for the findings of clubbed fingers and/or hypertrophic pulmonary osteoarthropathy. The questions of pathogenesis and etiology still remain. The answer to these and many other questions are buried in the research of the future, but even if clubbing should remain the enigma etiologically that it is today, its importance should be better understood and its diagnosis more logically and confidently made, for in any of the disease entities previously mentioned it may be one of the earliest signs and therefore a valuable

adjunct to the clinician, who in many cases is successful in his therapy only when and to the extent that, a diagnosis can be made early and in the incipience of a condition, which if allowed to proceed further would perhaps reach the stage of either inoperable or firm resistance to whatever therapies are available.

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## DANGERS OF FDA ADVERTISING CONTROLS

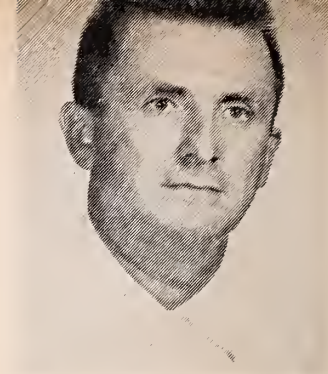
If one stops to think about it, the effect of government-muzzled (drug) advertising is one that curtails not only advertising, but also independent text which it monetarily supports. In other words, it tends to abolish freedom of the press. We begin to wonder if this had been one of the diabolical aims of the Fedicare faction. That is, not so much to protect people from poisonous potions as to strip power of the American medical professions; not so much to bless people as to boss them. — Editorial in *Northern Virginia Medical Bulletin*, September, 1963.



# Typhoid Fever and Appendicitis: Report of Two Cases with Perforation of the Appendix

by

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Typhoid fever and its complications is still to be considered in the differential diagnosis of the acute abdomen. Unless it is kept in mind the surgeon may be misled, and instead of a successful outcome to a relatively easily managed problem, he may be confronted with a surgical catastrophe. The author in the case is to be congratulated on his diagnostic acumen and the related follow-up studies on his reported cases.

IN THE DAYS of long ago, when typhoid fever was common and the diagnosis of appendicitis was in a formative state, it was not unusual for some hapless surgeon to remove a thickened red appendix with a feeling of triumph, which feeling paled when the patient followed with a typical course of typhoid fever. The only reason the mistake is not made now is that typhoid fever has become all but extinct." This is a statement from Arthur Hertzler's surgical pathology monographs of 1936;<sup>5</sup> unfortunately, it is not typhoid but Dr. Hertzler's delightful style which has become "all but extinct" and the surgeon is still sometimes hapless. The recent typhoid outbreak in Switzerland emphasizes the warning of Priestly and Judd in the most recent *Christopher's Surgery*: "at present effective prophylactic and therapeutic measures are so general that the modern surgeon almost has forgotten typhoid fever. However, with travel made increasingly easy throughout the world, he would do well to keep it in mind."<sup>6</sup>

Read at a meeting of the Surgery Section, Medical Staff of St. Joseph's Hospital, Phoenix, Arizona, April 9, 1962.  
218 East Stetson Drive, Scottsdale, Arizona.

Supplementing this caution, here are reported two cases of typhoid with perforation of the appendix.

Typhoid fever is an acute generalized infection caused by *Salmonella typhosa*. Once the scourge of medicine, the disease has been reduced to a minimum by sanitary measures designed to eliminate contamination of drinking water by human excreta. A significant fraction of convalescents retain viable organisms in their stools for years; these "carriers" serve as an ever-present source of infection, so that outbreaks may occur whenever sanitation is relaxed. A typical acute attack is characterized by fever, malaise, headache and abdominal pain. Constipation is frequent; diarrhea is rare. Bronchitis, with a persistent non-productive cough, is extremely common, often leading to the erroneous impression of a primary pulmonary infection. Certain well-known "typical signs" are not at all constant, and the observer should not be misled by their absence: bradycardia is often absent, "rose spots" usually are absent, and leukopenia is not well developed until the third week of the disease. Diagnosis



is usually made by laboratory tests: culture of the typhoid bacillus from blood or feces or by a positive Widal reaction. Blood cultures from an untreated patient are almost always positive in the first week of the disease, but not often afterward. The widal reaction becomes positive in the second week, stool cultures in the third week. Treatment consists of isolation, support and administration of the drug of choice, chloramphenicol. On one gram of chloramphenicol per day a moderately ill patient will usually remain toxic for two to four days and then rather abruptly get better. The prognosis for recovery is excellent unless the patient is extremely ill when treatment is begun or unless a complication ensues.

**T**HE ORGANISM enters the body through the gastrointestinal tract, invading the blood stream by way of the lymphatic channels of the ileum, with consequent hyperplasia and ulceration of Peyer's patches. Foot states: "the microscopic appearance of the lesion is striking and more or less unique. There is an enormous increase in the number of reticulo-endothelial cells of the Peyer's patches until they completely obscure the histology of the lymphoid tissue. At the same time they phagocytose large numbers of lymphocytes. . . . This results in mass necrosis of the patch and ulceration."<sup>4</sup> Boyd<sup>3</sup> and Andresen<sup>1</sup> point out that the lymphoid tissue of the appendix may show the same involvement.

It is this necrosis of the lymphoid tissue of terminal ileum, cecum and appendix which results in the most common and most serious complications of typhoid fever: hemorrhage and perforation. It has been estimated that intestinal perforation occurs in one to two percent of all cases and that one-fourth to one-third of these end fatally.<sup>2</sup> The treatment of perforation is, of course, immediate surgery, sometimes in a very ill patient. Here follow two case reports.

**Case 1.** D.C.S. This 20-year-old migrant agricultural laborer entered the United States from Mexico on 4-27-59. About 15 days later he noticed the onset of vague intermittent abdominal pains. On 5-26-59 the pain was more severe and had become localized in the epigastrium. He was anorexic and constipated but took no laxative. The next day he vomited three times; the pain was worse and by evening had shifted to the right lower abdomen; at this time he was admitted to Memorial Hospital, Phoenix. The

patient did not appear very ill. Temperature was 98.0 with pulse rate 100. The abdomen was flat with quiet bowel sounds; there was moderate spasm and direct and rebound tenderness localized at McBurney's point. Routine laboratory studies were negative except for WBC 16,200 with 90% polys. On the evening of admission the patient was taken to surgery with the diagnosis of acute appendicitis. A McBurney incision was made. The lower peritoneal cavity contained several ounces of thick greenish-gray pus; the quantity was surprising in view of the apparent absence of toxicity. The appendix was gangrenous throughout, with a perforation 1.0 centimeter in diameter near the base. Inflammation and edema extended onto the cecum for several centimeters. An appendectomy was done, after which a drain was placed near the appendiceal stump and brought out at the lateral pole of the incision. The pathologic diagnosis of the surgical specimen was "acute gangrenous appendicitis with perforation." Culture of the pus grew *E. coli* and *Proteus vulgaris*.

Post-operatively the patient was put on a routine peritonitis regime with nothing by mouth, naso-gastric suction, intravenous fluids containing tetracycline, and intramuscular penicillin and streptomycin. For two days the temperature remained near 100.0; the abdomen was flat, soft and quiet. On the third day the temperature rose to 102.0 degrees and the patient passed two large liquid stools. A Widal agglutination test was done: the typhoid "O" agglutination was positive 1:160, typhoid "H" was negative, and *Proteus* OX-19 was positive 1:80. Paratyphoid "A" and "B" were negative. The tetracycline, penicillin and streptomycin were discontinued, the patient was isolated, and chloramphenicol was begun, one gram intravenously and one gram orally per day. The next day the temperature fell to 99.2 and remained under 99.0 thereafter. The diarrhea diminished gradually and ceased on the seventh post-operative day. Oral intake remained poor until the seventh day. Intravenous chloramphenicol was carried on through the sixth day. Several stool cultures were negative for *S. typhosa*. On the seventh day the typhoid "O" agglutination was positive 1:160, *Proteus* OX-19 positive 1:40, and typhoid "H" and paratyphoid "A" and "B" were negative. The oral chloramphenicol was discontinued on the tenth day. Stool cultures were



## Original Articles

again negative on the ninth, fourteenth and sixteenth days. The patient was dismissed from the hospital in good condition on the seventeenth day.

**Case 2. D.A.C.** This 36-year-old migrant agricultural laborer entered the United States from Mexico on 10-29-59. About six days later he noticed the onset of vague abdominal pain, anorexia and constipation, but did not require medical attention. On 11-18-59 the pain and anorexia became worse. The pain shifted to the right lower abdomen the next day and the patient was admitted to Memorial Hospital, Phoenix. Examination showed only mild distress. The temperature was 99.0 and the pulse rate 86, with the abdomen generally flat, soft and quiet. There was moderate spasm and direct and rebound tenderness at McBurney's point. The white blood cell count was 13,400 with 67% polys. On the day of admission the patient was taken to surgery with the diagnosis of acute appendicitis. A McBurney incision was made. The peritoneal cavity contained a small amount of cloudy light brown fluid. The omentum was fixed in the right lower abdomen and had wrapped around the tip of the appendix, which lay postero-lateral to the cecum. There was a perforation in the tip of the appendix, with the formation in the omentum of a well-defined abscess cavity containing gray-green pus. The cecum and ileum were grossly normal. The appendix and the portion of omentum containing the abscess were resected. A peritoneal drain was brought out at the lateral pole of the incision. The pathologic diagnosis of the specimen was "severe acute and chronic appendicitis and peri-appendicitis, with abscess formation." Culture of the pus grew out *E. coli*.

The patient was put on the usual post-appendectomy routine supplemented by intramuscular penicillin and streptomycin. His temperature rose to 101 degrees on the first post-operative day and to 102 degrees on the second day. At this time a Widal test was done; typhoid "O" agglutination was positive 1:80, with typhoid "H," *Proteus* OX-19, and paratyphoid "A" and "B" all negative. The patient was isolated and was

started on chloramphenicol one gram per day orally. Two days later he was better clinically, with temperature down to 100 degrees; on this day the typhoid "O" agglutination was positive 1:160. The peritoneal drain was gradually shortened and was removed on the sixth day, by which time the temperature was normal. Purulent drainage, negative for *S. typhosa* on culture, continued but eventually stopped on the nineteenth day. Stool cultures were negative on the third, eighth, twenty-second, twenty-fourth and twenty-sixth post-operative days. The patient was dismissed from the hospital in good condition on the twenty-seventh day.

**Conclusion.** These case reports appear to suggest that:

(1) A reservoir of typhoid fever exists and the disease may appear at any time, especially under circumstances of poor sanitation;

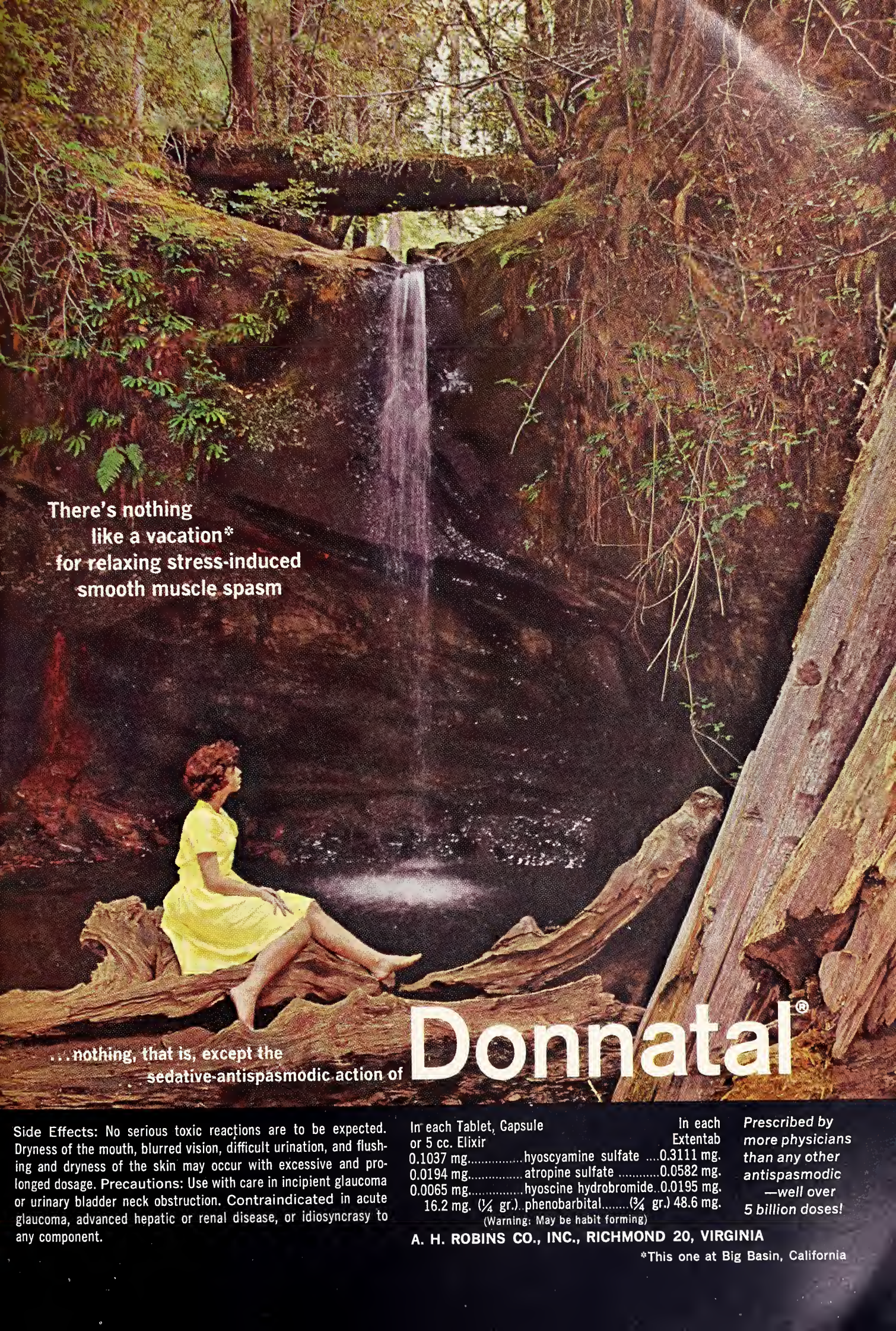
(2) Typhoid fever can be complicated by appendiceal perforation, in which case treatment should consist of early appendectomy, drainage of the area, isolation of the patient, and routine peritonitis management supplemented by the administration of chloramphenicol; and

(3) The diagnosis of typhoid fever might be entertained when a patient who has been exposed to poor sanitation appears to have more or less typical acute appendicitis but with prodromal symptoms for a week or two before. These symptoms might consist of cough, constipation, anorexia, headache, fever, or mild, vague, intermittent abdominal pain which has rather abruptly become more severe and localized to the right lower quadrant. The experience reported here confirms Dr. Hertzler's observation that the surgeon is most apt to consider the diagnosis of typhoid fever if his patient is not doing well post-operatively.

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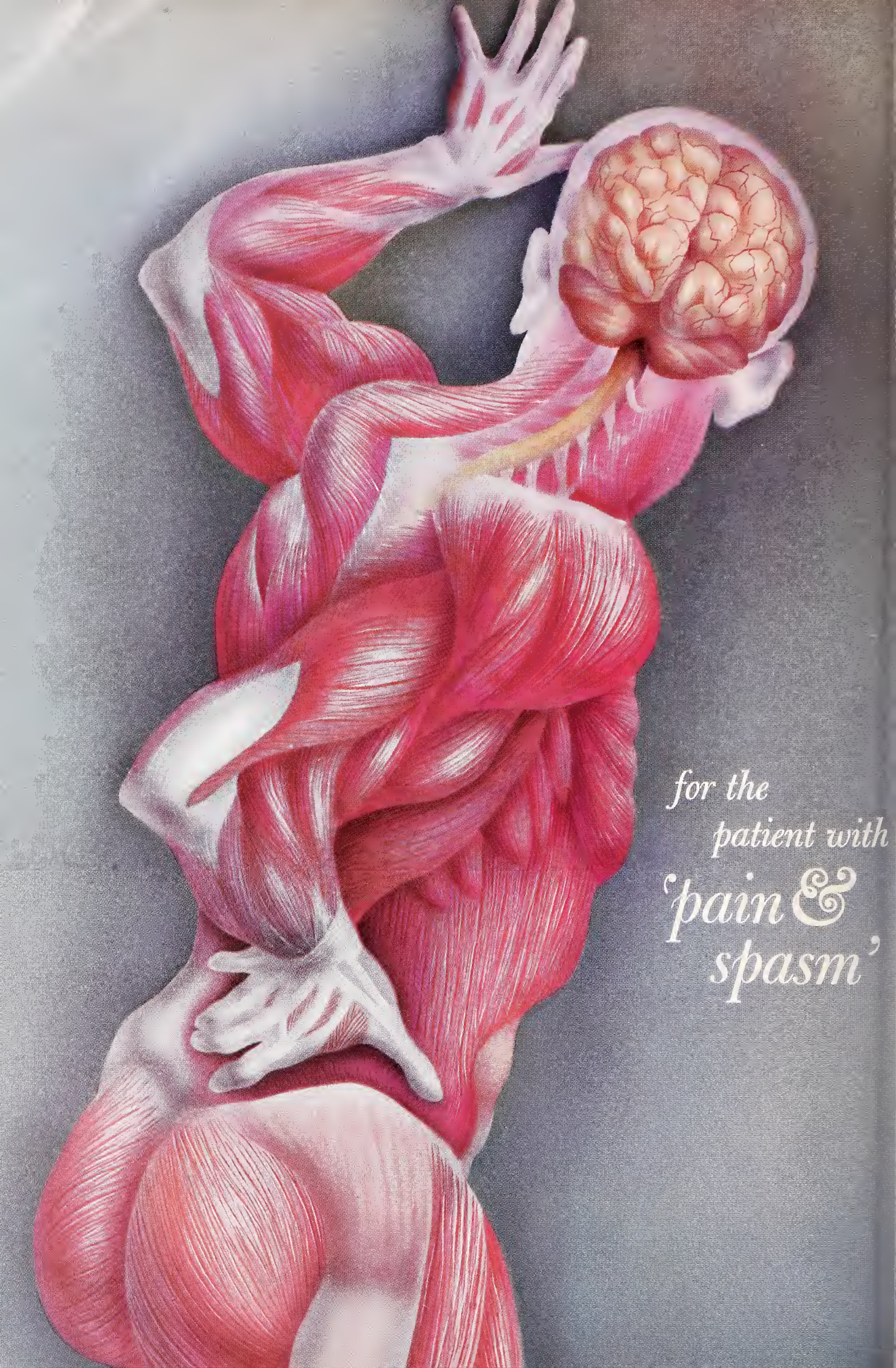
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*The discharged  
mental patient . . .  
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*"The average practitioner is quite capable of handling the vast majority of ex-institutionalized patients by regulation of medication, reassurance, manipulation of the environment where necessary, and . . . other technics."* Kline, N.S.: Postgrad. Med. 27:620 (May) 1960.

The family physician must often assume responsibility for the discharged mental patient. Thorazine (chlorpromazine, SK&F) can be a valuable adjunct to the continuing care of this patient, because it helps prevent relapses by insulating him from the impact of stressful experiences. For successful rehabilitation and prevention of rehospitalization, however, the former mental patient—and often his family—also needs the guidance and counsel of his physician.

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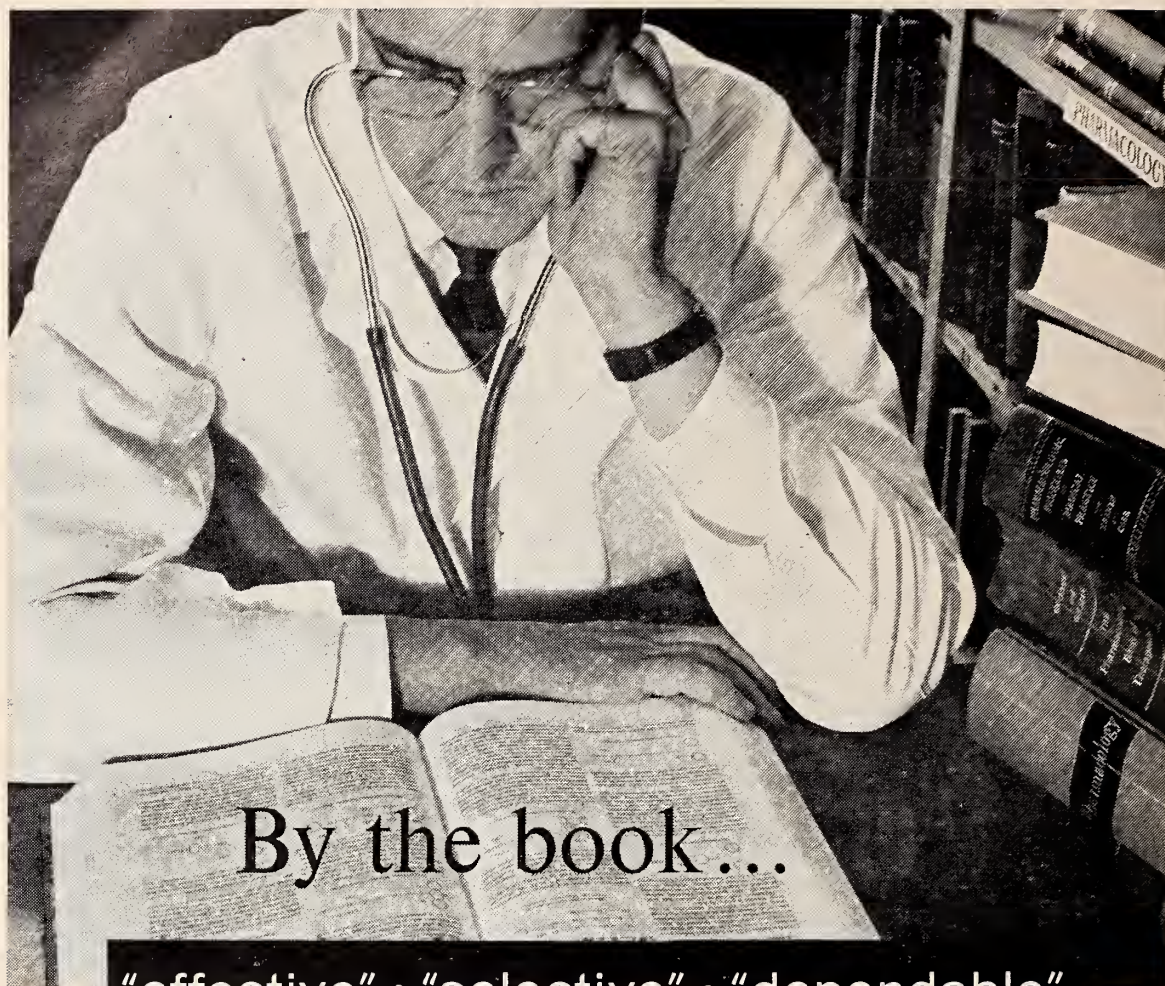
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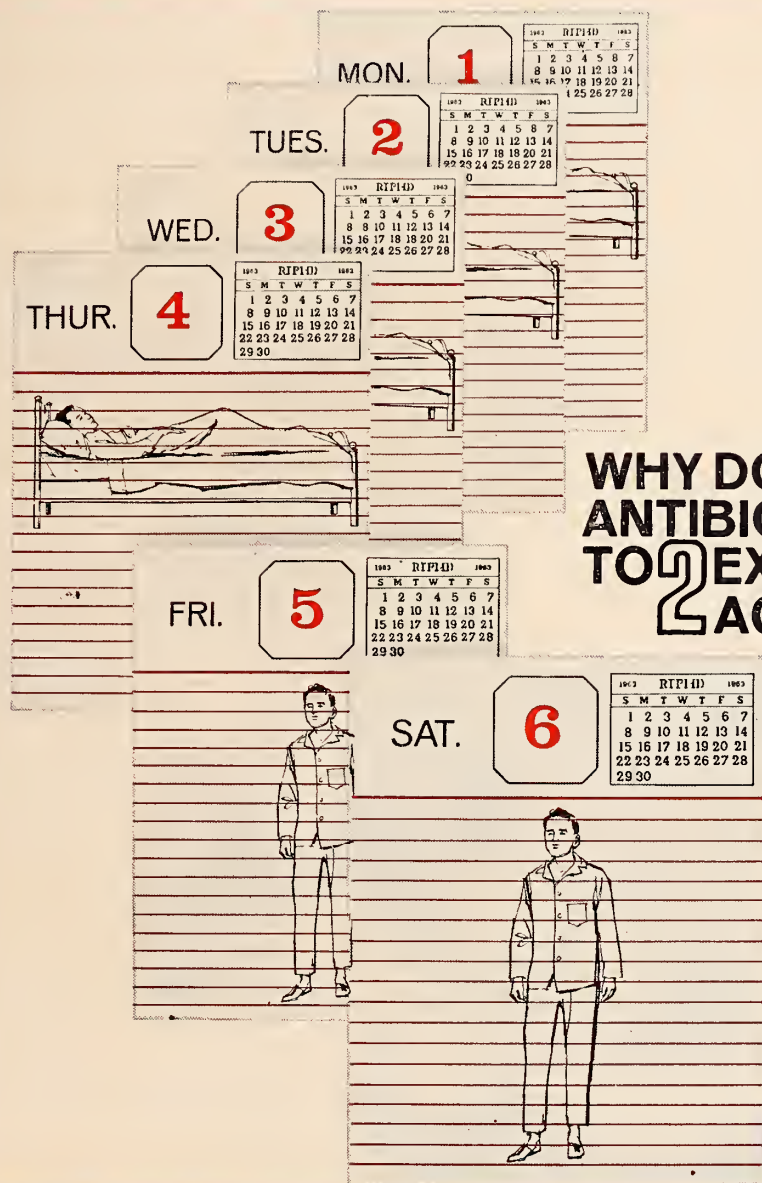
*The usual adult dosage* is one tablet of 15 mg. with meals and two at bedtime.

**Side Effects And Cautions**—Urinary hesitancy, xerostomia, mydriasis and, theoretically, a curare-like action may occur with Pro-Banthine (propantheline bromide). It is contraindicated in patients with glaucoma or severe cardiac disease.

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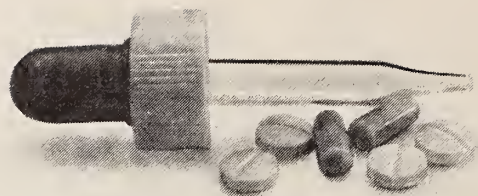
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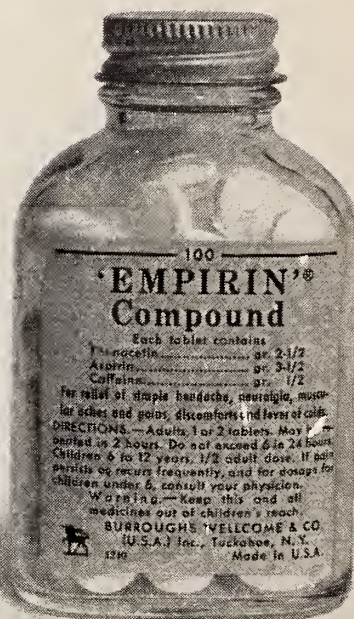






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	50	\$18,502.50	\$37,005.00	\$74,010.00
Company "M"	35	\$14,198.50	\$28,397.00	\$56,794.00
	50	\$17,788.25	\$35,576.50	\$71,153.00
Company "NY"	35	\$13,730.75	\$27,461.50	\$54,923.00
	50	\$17,466.75	\$34,933.50	\$69,867.00
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**INDICATIONS:** For both productive and nonproductive cough. For relief of symptoms in tracheitis, bronchitis, pneumonia, pharyngitis, bronchial asthma, pertussis, and allied conditions; cough

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**DOSAGE:** Average adult dose—1 teaspoonful after meals and at bedtime with food. Children 6 to 12 years, ½ teaspoonful; 3 to 6 years, ¼ teaspoonful; 1 to 3 years, 10 drops; 6 months to 1 year, 5 drops; after meals and at bedtime. On oral Rx where state laws permit. U.S. Pat. 2,630,400.

**CAUTION:** Should be used with caution in patients with known idiosyncrasies to phenylephrine HCl and in patients with moderate or severe hypertension, hyperthyroidism or advanced arteriosclerosis. In these patients use should not exceed three days. Hycodan Syrup is generally well tolerated but in some patients drowsiness, dizziness or nausea may occur. May be habit-forming.

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William B. Steen, M.D.

OUR state association has been very actively interested in the problems of a medical college in the state of Arizona. Our Medical School Committee functioned for many years studying the problem. However, since 1958, the tempo has greatly increased. The House of Delegates on May 3, 1958, passed a re-

solution approving the establishment of a state supported medical college in Arizona. The significant symposium, entitled Medical Education for Arizona, was presented by ten outstanding medical educators at the 68th meeting of the Arizona Medical Association in Chandler, in 1959. Then came the basic document on all aspects of the problem of medical education in Arizona, entitled, *The Arizona Medical School Study*, which was reported to the Board of Regents and established the medical college at the University of Arizona in Tucson. In September, 1963, Dr. Richard A. Harvill, President of the University of Arizona announced the selection of Dr. Merlin K. DuVal as Dean of the new Medical College. He comes to us with outstanding qualifications, necessary to leadership in the development of the Medical College.

Higher education has developed slowly in Arizona. From the time the first European crossed into what is Arizona in 1539, and the creation of the University of Arizona in 1885, some 346 years had elapsed. It has taken 77 years to create a Medical College. We are somewhat slow, but thorough in what we do. We will continue our growing up process and begin to educate our own doctors. We will not depend wholly on our sister states to do the job.

The University Hospital will function in undergraduate and graduate medical training for medical students, interns and residents and continuing medical education.

CERTAINLY an outstanding Medical Center will develop for the whole state of Arizona. A must is an outstanding medical library. There are at present, a College of Pharmacy, College of Nursing and a School to train medical technicians. Needed in the future will be a Dental

College and Veterinary College.

The general level of medical care will be elevated. Many new doctors of professorial rank, specialists in their respective fields will find their way to Arizona. More programs of continuing graduate medical education will develop to help to bring higher standards of medical care.

THE addition of a Medical College to the University will help in our cultural relationship with the western part of Mexico. Here already a great deal of cultural cooperation exists. Certainly this will broaden the sphere of partnership between Arizona and its good friend to the south. This represents active participation in a good sound neighbor policy.

The impact of a Medical College will bring problems to be solved and readjustments to be made in the general medical practice. This should be foreseen and realized as it has happened in other areas with the development of a Medical College.

Yet the benefit to be derived from a Medical College will help the whole state of Arizona. The project needs your complete support.

This letter would not be complete without calling your attention to our very important National and Local Legislative programs. Further House Ways and Means Committee Hearings on HR 3920, the King-Anderson Bill, were set (at the time of writing this letter) for the end of January. Inasmuch as the supporters of this bill will make a supreme election year effort to secure its passage, we must make our greatest effort to arouse and mobilize public opinion against this unjustified legislation. I hope all our Operation Hometown, all the doctors, their wives and friends will make a new effort to defeat this measure.

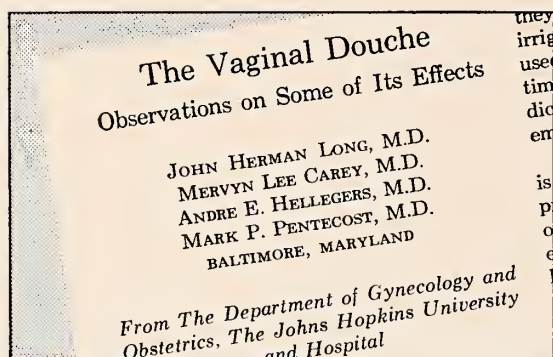
The 26th Arizona Legislature convened on January 13 in second regular session. A number of bills of utmost importance to organized medicine will be introduced. The Medical Practice Act, An amendment to the Basic Science Law, A Kerr Mills Bill and a Good Samaritan Bill.

Information has been supplied regarding these Bills in previous issues of this Journal, also listed in the December, 1963 issue, pages 22A and 23A will be found members of our 26th Legislature. It is hoped that the doctors of the state will work through their Senators and Representatives to do everything possible to secure passage of these measures.

WILLIAM B. STEEN, M.D., President



# A DEFINITIVE STUDY ON DOUCHING



## A SEARCH OF MEDICAL LITERATURE REVEALS NO COMPARABLE OBJECTIVE EVALUATION OF THE SUBJECT.

*The authors state at the outset,*

"Each physician has his own idea of the value or harm of the vaginal douche and many have expressed such ideas in writing. Such opinions have been arrived at without any intensive investigation or observation of subjects using douches as compared to those not using them. The purpose of this study is to report our observations on three groups of patients, one taking no douches, a second douching with a medicated solution\* and a third douching with plain water."<sup>1</sup>

1. West. J. Surg., Obsts. & Gynec.: 71:122-127, 1963

\*The medicinal powder used in this study was META CINE®, a scientifically formulated preparation containing: papain, lactose, citric acid, methyl salicylate, eucalyptol, menthol and chlorothymol.

## OBSERVATIONS BASED ON EXTENSIVE AND THOROUGH EXAMINATION SCHEDULE.

"One hundred patients were selected at random, regardless of their chief complaint, from the general population attending the Out-Patient Gynecology Clinic of The Johns Hopkins Hospital. Those selected were reexamined at 1, 3, 6, 9 and 12 months after the initial visit."

"At intervals patients were switched to the regimen of another group so that comparison of the effect of douching or not douching might be made in the same individual."

Three years were required to complete the study.

An evaluation of the objective findings of the study demonstrates that douching with META CINE® had the following effects on vaginal secretion:

- increased Doderlein organisms,
- proved effective in lowering WBC counts,
- proved effective in increasing glycogen content.

META CINE® was found to be a good antagonist to vaginal discharge and irritation—and also proved effective in reducing cervicitis.

No untoward effects of douching were encountered in the study.

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LISTEN

Although we are living in the age of the spoken word (since the development of the vacuum tube and the transistor) there is sometimes a question of the value of the words we hear. The language of the comic book, Madison Avenue, and the political word-twisters has dulled our auditory reflexes so they no longer easily differentiate meaningful and precise phrases from senseless and formless verbiage.

As a reaction to this era of the myopic metaphor we may tend to suppress our conscious receptors, and fail to grasp some of the diagnostic

“pearls” cast before us by our patients while we are taking their history. The careful history is still the most important of our diagnostic tools, and before we rush for the laboratory studies it is well to remember the teachings of the famous surgeon, John Benjamin Murphy, who admonished his students to:

“Listen, listen to the patient’s story. He is telling you the diagnosis.”

Robert F. Lorenzen, M.D.  
Editor

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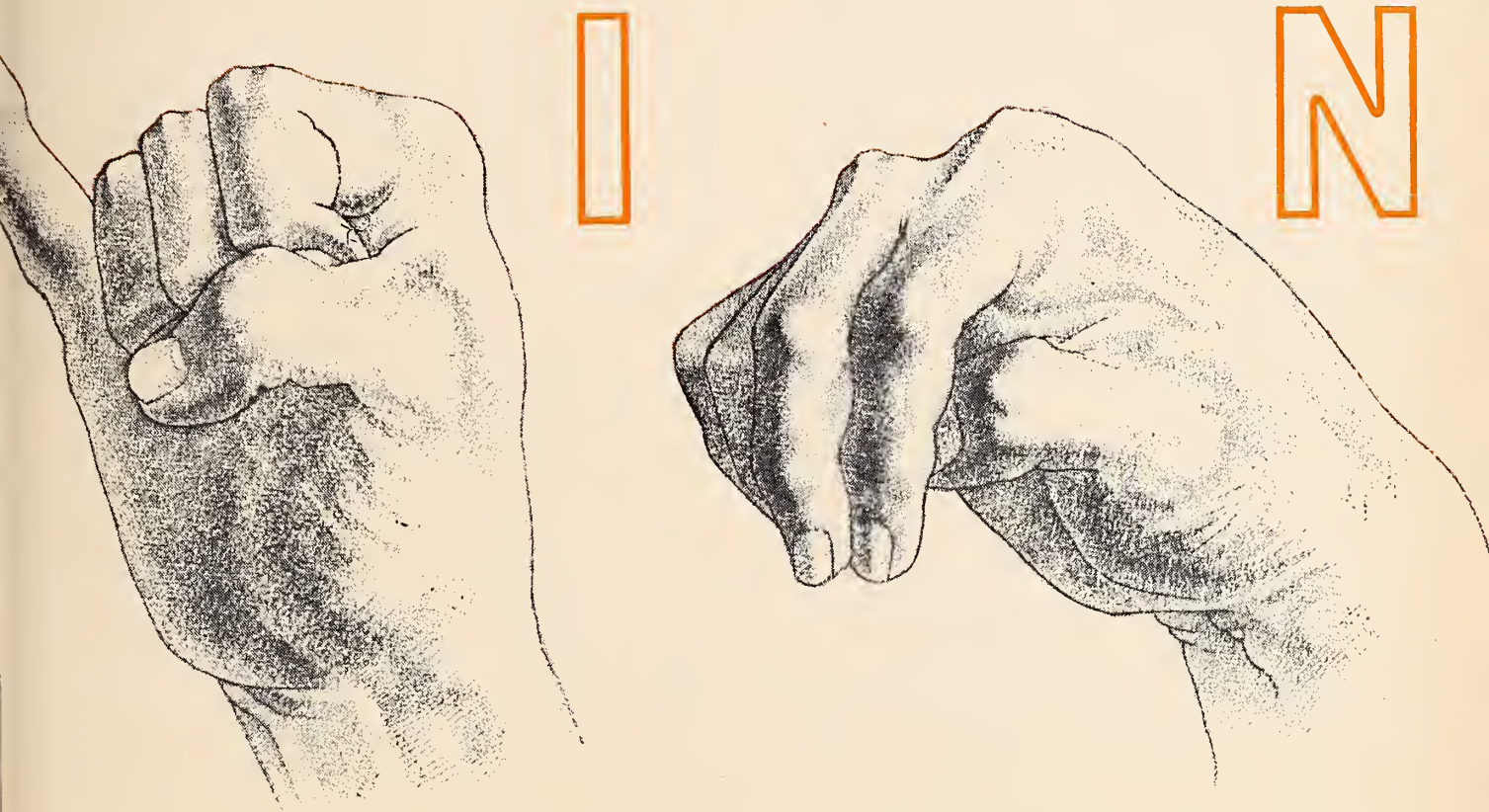
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\*Cohen, et al: J.A.M.A., 165:225, 1957.

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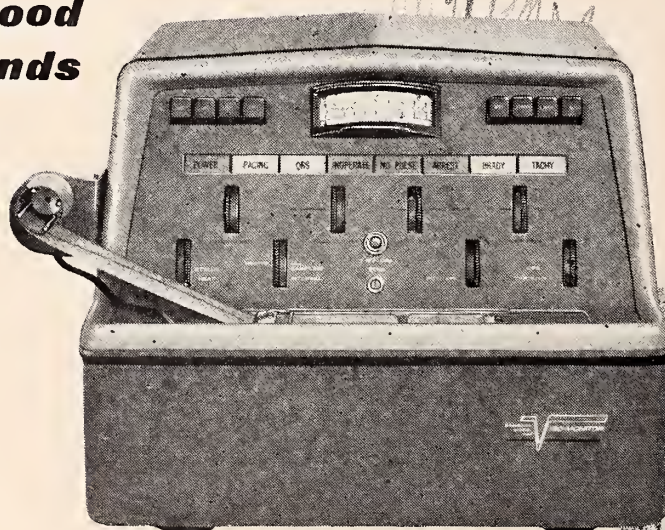


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# Is It Possible To Have Health Without Welfare?

by

Richard L. Durbin and Robert C. Hardy

## Part 1—the problem

### the opposing points of view points of general agreement

AS a result of the differences of viewpoint among the American people, as well as the legislators who represent them, about how the expanding group of elderly citizens should pay for the health service they need and want, another effort, in 1962, to federalize the method by which this is done was unsuccessful. Several conclusions may be reached about this continuing struggle to make a Federal case out of every illness which happens to everybody over 65. The fact that efforts to enact compulsory health insurance legislation have met defeat repeatedly since President Truman gave his approval to the principle more than a decade ago, indicates that there continues to be a significant divergence of opinion on this subject. The conclusions drawn from the history of this struggle and the most recent events in the Congress are naturally dependent on one's point of view. Here is one set of conclusions:

- ★ Everyone is not convinced that the need for medical care for the aged is sufficient to warrant the proposed Social Security system of financing it (King-Anderson).
- ★ Everyone is not in agreement about the cost of this program, even the cost of the first year when factors are relatively apparent, and the cost controversy expands when the attempt is made to predict the financial future.
- ★ Everyone is not sold on the American Medical Association's assertion that the King-Anderson approach would be the entering wedge of socialized medicine.
- ★ There are, however, certain facts, principles and philosophies concerning need, freedom, prepayment, quality, timing, responsibility, cost, demand and services on which agreement is probable.

- ★ These facts, principles and philosophies can be used to undergird an improved method of equipping people with the power to purchase health service when they need it.

We propose to reexamine these facts, principles and philosophies and describe a method which may be more acceptable to more Americans because of the advantages it offers over the administration's program which was narrowly defeated in the Senate and is currently lodged in the House Committee on Ways and Means.

First, let us place a yardstick along side the first three conclusions regarding need, cost and socialistic propensities and try to measure the distance between the two points of view.

### Opposing Points of View

#### NEED

The former Secretary of Health, Education and Welfare, now Senator Abraham Ribicoff said: (1)

"By 1964 there will be 18 million people in America over age sixty-five. About 14.25 million will be eligible under Social Security."

By proposing to provide health care for aged persons under the Social Security program, we must assume that the Secretary meant that the number who need or will need this coverage is 14¼ million. However, he also said that 750,000 retired railroad workers or Federal employees have *their own plans* and therefore would *not* need the coverage under Social Security.

On the other hand, Dr. F. J. L. Blasingame, vice-president of the American Medical Association, said: (2)

"In the first place, we have no real evidence that such an approach (King-Anderson) is necessary. The particular group that has been the central focus of this discussion has been the aged, and we have yet to see any proof that this



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group needs federal subsidy in a broad and general sense.”

He also made this statement:

“We have, as an association all across the country through our constituent societies, made public announcement after public announcement: If you know of individuals who do not get hospital or medical care because of economic circumstances, let us know. We have had very few instances arise.”

### COST

Asked about the cost of the expanded health care benefits under Social Security, Secretary Ribicoff estimated the cost for the first year at 1.1 billion dollars. He implied that the increased Social Security tax of one-half percent divided equally between employer and employee would cover these added benefits.

Representative Frank T. Bow of Ohio has said that insurance experts conservatively estimate the cost of King-Anderson at 2.1 billion in the first year, expanding to 5.4 billion by the end of 20 years. (3)

Ray M. Peterson, vice president and associate actuary of the Equitable Life Assurance Society of the United States, writing in the *Journal of the American Medical Association*, points out that the difference between benefits and taxes under the Social Security system has created a growing debt of 300 billion dollars on which future generations must pay interest. He estimates that to add health benefits under Social Security, another 20 billion dollars of unearned increments would be granted which could add to the permanent social security debt on which employees and employers would be paying interest forever. (4)

If there is no agreement as to the unmet medical need among the elderly, it is extremely hazardous to estimate the cost of meeting this unknown requirement for health service under new mechanisms for its payment.

### SOCIALIZED MEDICINE

The label which should be applied to health care for the aged under Social Security — is it or is it not socialized medicine — is described this way by Secretary Ribicoff:

“Our program is not socialism. Socialism is a system where the state owns the hospitals, operates the hospitals, pays the doctors’ salaries and pays for maintaining the hospitals.”

However, Dr. Blasingame thinks differently:

“ . . . the American Medical Association feels the King-Anderson bill which utilized the social security mechanism of taxation is incompatible with our traditional system and would actually substitute a very radical and compulsory method. It would be socialized medicine for a segment of our population, would be irreversible, and would shortly be extended to complete socialization of medical care.

“ . . . So we cannot see any effect except a damaging of the relationship between the physician and the patient. We believe that this relationship will suffer serious impairments when the individual physician is, in effect, working under contract for the system — in this case, the Federal Government — rather than the patient. The patient will be looking to the system rather than to the physician.”

### Points of General Agreement

This description of opposing points of view would indicate a considerable distance between the pros and the cons. In such a situation, it appears logical to determine those points on which there *is* agreement and provide an exit from the controversy close enough and wide enough to permit rapid and orderly egress with minimal travel distance and the least amount of jostling. Whether or not either side can be persuaded to accept this way out depends largely on political considerations. There are instances in which people are made beneficiaries of government programs whether they want to be or not. After the recent congressional elections (November, 1962), George Gallup, director of the American Institute of Public Opinion, said: (5)

“The ‘Medicare’ issue did not aid the Democrats measurably among the group most directly affected by this proposal . . . the nation’s senior citizens age 65 and older. They were the one age group, in fact, to give a majority of their votes to Republican congressional candidates . . . and about the same size majority as in past elections.”

The points which are probably recognized as least debatable, the ones on which there is general agreement, are here listed in groups broadly associated under the titles of need, service, cost and philosophy. These statements form the basis for the method of financing medical care thereafter proposed.

### NEED

*Need* — Under this general classification, need



is difficult to distinguish from demand for medical attention. We can count the number of admissions to hospitals in a year (25 million in 1961) and compare this figure with the population (185 million people) and conclude that one in every 7.4 citizens is admitted to hospitals each year. While this is an indication of need, it is not an accurate measurement of need, because we know that a significant percentage of the people admitted to hospitals today could be cared for outside of the hospital. However, it is probably quite safe to say that oldsters need more medical attention and institutional care than do people below the traditional retirement age of 65.

*Demand* — Despite the increased cost of medical care today, the demand for health services is increasing markedly. The effectiveness of scientific medicine and the widespread coverage of health education make health care desirable and important. In fact, the attitude toward medical service has gradually shifted until now it is considered a right rather than a privilege.

*Income* — Both need and demand for medical care are influenced by financial considerations. The level of health among indigent patients is known to be lower than that of their more affluent fellow citizens. Fortunately, the size of the very lowest income group, families earning less than \$4,000 annually, has declined during the past ten years. On the other end of the scale, families with more than \$10,000 a year income are on the increase, which means that more people can afford adequate health service. But the group with incomes that fall between \$4,000 and \$10,000 per year, about half of the population, has remained about the same in size. This group, which is not eligible for charity but, on the other hand, cannot withstand huge outlays of money for medical care, is especially vulnerable to financial disaster because of the expense of illness.

*Timing* — Timing of medical services is important in two respects. First, medical services should be oriented toward the prevention of illness. Such services are effective before illness strikes or at the point disease is first detected. Most people will agree that our efforts in positive medicine — health education, disease-finding, periodic physical examinations and immunizations — are important but not sufficiently far-reaching. The severity of disease among indigent patients in so-called “charity” hospitals is significantly greater than that among paying pa-

tients in private institutions. Second, the ability to purchase needed medical care must be present when the illness manifests itself. Most people recognize that the increased incidence of disease which accompanies old age comes at the very time that resources to pay for medical care may be sharply declining. Thus the ability to purchase the doctor’s attention and the hospital’s accommodations may not be present during the period of the patient’s greatest need.

It appears, then, that there is both need and demand for medical care and that both will undoubtedly expand even more rapidly than the ballooning population.

#### SERVICE

*Professional Care* — While doctors are able to do more for patients when they attend them, there are fewer physicians per population unit in America now and the prospects are for even fewer in the foreseeable future. The downward trend slants at this angle:

Doctors per 100,000	
Year	Population
1910	146
1960	132
Predicted for 1975	125

The rapidly expanding population of this country and the increasing interest of physicians in research and other nonclinical pursuits contribute to this decline.

*Types of Care* — Various types of medical services have been developed and are available, i.e., hospitals, clinics, private physicians offices, nursing homes and home care, but there is an important inclination to use that service for which prepayment has been made, whether or not it is the most efficient, effective and economical.

Unfortunately, insurance policies covering such a variety of services have not been widely sold. Since insurance protection is largely directed toward payment while in the hospital, this type of care is misused and overused with the result that the cost of medical service is greater than it has to be. Insurance coverage should be designed so that it is to the advantage of both the physician and the patient to seek more economical ways of meeting medical problems outside of \$40-a-day hospitals.

*Quality of Care* — Scientific and technical advancements in recent years have improved the quality of medical care . . . that is, people with



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the same illnesses get well today where previously they did not recover and they get well quicker than they once did. However, "quality of care" is extremely difficult to define and, to date, no really satisfactory method of measuring it has been discovered.

Facing the widening gap between expanding need and fewer physicians to satisfy the demand for medical attention, we shall be compelled to conserve medical talent (while striving to increase the supply of it) and utilize our health facilities more efficiently.

### COST

*Prepayment* — In the ten years between 1950 and 1960, the amount of money spent in this country on medical care and health insurance more than doubled. While an increasing proportion of hospital bills are prepaid, insurance premiums have naturally increased as hospital costs have risen.

*Cost* — During the same ten-year period, while the money spent for medical care was doubling, the cost of service in general hospitals went up 106 per cent. This means that there is twice as much financial hazard for people who decline to purchase insurance protection. It also means that major or prolonged illness can more quickly devour the financial resources of a family and either make that family dependent on government or bury it in debt.

*Taxes* — While one would suspect that as the number of low-income families decreases the expense of welfare support for medical purposes would also decline, this has not been the case. The rising costs of and demand for medical care have more than offset the decline in indigent families with the result that there has been a 58 per cent rise in per capita expenditures of public assistance funds for this purpose, from \$15.33 in 1950 to \$23.27 in 1960.

### PHILOSOPHY

*Freedom* — Any system designed to solve the financing medical care should preserve maximum freedom of choice for the individual. In assisting the citizen in the provision of medical service, government should do only what the citizen and private enterprise cannot do.

*Control* — Local control of local community facilities is traditional in America. Schools, police and fire protection, hospitals and utilities are usually administered locally and paid for by dollars derived from local taxes or fees for the

services provided.

*Responsibility* — Although it is tempting to seek government aid when illness precipitates a financial emergency, each citizen has the responsibility for his own care and that of his dependents up to the limit of his financial capability. Our modern, private insurance system now permits us to assume a greater measure of financial responsibility by the sharing of risk and the prepayment of medical bills.

*Incentive* — The maintenance of physical and financial health should be sufficient incentive for Americans to see their doctors and dentists regularly and pay their health insurance premiums. However, we know that other demands for attention and money often interfere so that when illness strikes, patients are often not prepared in either respect. Thus, a system which would solve health care financial problems should contain built-in incentives stimulating both preventive care and financial preparedness.

## Part II

### A New System Proposed

These basic facts and ideas about need, service, cost and philosophy are so highly familiar that their restatement is somewhat boring. They say nothing new and raise little argument. The improved method of equipping people with the power to purchase health service when they need it, which we here propose as an alternative to the King-Anderson approach, is designed around these facts, principles and philosophies just stated. The system would operate this way:

- ★ Each citizen would be required to purchase health insurance protection not to exceed his need and his ability to pay.

- ★ Minimum protection standards geared to each income level would be established by the Federal government.

- ★ Each citizen would report the extent and source of his health insurance coverage in his annual income tax return.

- ★ Persons who failed to provide pre-payment protection for themselves and their dependents to the extent of their financial ability would be assessed penalties through the internal revenue service. Dollars so received would be distributed to local political subdivisions to help defray the cost of service to the indigent.



This simple system would hold each citizen responsible for his own protection yet give him maximum freedom in obtaining the insurance he requires. He could purchase his insurance from the company or in the plan of his choice. The specifications for coverage set by the Federal government would be minimum so he would be free to adjust the type and amount of protection above this minimum to his own liking. The average cost of the specified benefits would be ascertained so that the requirement for each income group would not exceed a specific and reasonable percentage of each citizen's gross income.

The information about each taxpayer's insurance protection, reported on the income tax form, could be easily verified with the company or plan shown. As long as the purchased protection, covering all persons shown on the income tax return as dependents, met the minimum requirements for the gross income reported, the taxpayer would have met his obligation of financial preparedness in case of illness. However, in the event he failed to purchase the protection he could afford, the average cost of the annual premium for this required protection would be due and payable as income tax, with the existing, appropriate penalties for nonpayment.

Under these circumstances, the taxpayer would have a double incentive. First, the fear of penalties under the income tax law would inspire most Americans to comply, since the purchase of insurance would be preferable to the payment of additional taxes. Second, those who did not buy insurance protection would not only have to pay the extra tax but would be liable for the payment of hospital or clinic charges in the event they or their dependents became ill.

Under automobile driver financial responsibility laws, many states require that those who drive must carry liability insurance or have sufficient resources to pay for damages to others' property or injury to other persons. It is logical, also, to require those who can afford it to buy health insurance so that in the event of illness they will not cause their fellow taxpayers to suffer financially.

Having examined the King-Anderson bill with regard to need, cost and socialized medicine, let us do the same with this proposal.

#### NEED

The need for medical care will always be dif-

ficult to quantify, as indicated by the different viewpoints of the American Medical Association and the Department of Health, Education and Welfare. This proposal would first assure that every citizen with financial resources would be prepared to meet the cost of illness in so far as the insurance benefits required for his income would allow. Thus, the problem of providing financially for the care of indigent patients would shrink to the lowest possible magnitude. With everyone paying their way to the best of their ability, local governmental institutions would have increased financial capability for the care of more indigent or more comprehensive care of the ones they now treat. There would be no overlapping or shifting of insurance coverage, no free protection for those who do not need assistance, and no determination of financial need on the basis of irrelevant criteria such as age or social security status. Just because a person is over 65 and is eligible for social security benefits does not necessarily mean that he needs help with his medical bills.

The fact that 25 million Americans are admitted to hospitals annually is an indication of the need for medical care, not the need for assistance to pay for that care. It is only logical to base the measurement of financial need on financial information.

#### COST

The increased social security taxes proposed to finance the King-Anderson system would be paid by the working age person and his employer, but the worker would have no increase in his current protection. Thus, the middle income person's problem would be magnified, for he would not only pay more social security taxes but would still have to buy insurance protection for today's needs.

The proposal just described, on the other hand, assesses no new taxes but recognizes those responsible citizens who have already purchased health insurance protection. Only the person who has not pulled his share of the load is required to increase his effort, and even then, he is the direct beneficiary of the money he is required to spend.

With significant budget deficits occurring annually, and the talk of tax cuts despite these deficits, a cruise into the uncharted seas of Federal care for the aged could swamp the Social Security system with unanticipated costs. The



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fiscal experience of the socialized health care program in Canada is proof that this can happen.(6) This new proposal, which avoids the dangers of further Federal debt, appears to be a more responsible course of action.

### SOCIALIZED MEDICINE

We know that the present system of complete choice in the selection of health insurance protection does nothing to upset the physician-patient relationship which is so important to personal medical care. The system here proposed merely extends the use of private insurance with no hazard to the traditional patterns of medical care. Local control of health care facilities, plus freedom of choice of hospital, insurance carrier and physician, would be retained. There would be no incentive under this proposal to change from private insurance coverage to Federal government-directed systems of protection against the cost of illness.

### A Reasonable Proposal

The King-Anderson bill wisely proposes benefits throughout the full range of available medical services; in hospitals, clinics, doctors' offices, nursing homes and in the patients' homes. This allows the patient to receive the care which most effectively and most economically meets his medical need.

There is no reason that the minimum coverage insurance required under this new system here described could not be just as comprehensive. In developing minimum specifications, the Federal government could, without taking significant freedom of action from insurance companies or individuals, influence the insurance industry to provide:

1. Guaranteed renewable protection for subscribers over 65.
2. "Community-rated" rather than "experience-rated" protection.
3. Incentives for physicians and patients to use

out-of-hospital services.

4. Coverage which includes important disease-finding and preventive medicine services.

The difficulty of measuring scientifically the unmet medical need among the aged makes it easy to exaggerate or minimize the problem, depending on your point of view. This alternative plan is proposed so that current known and accepted methods of care and financing can be utilized to their fullest possible extent. Until we do utilize our present system to the maximum, it should not be condemned by saying that it will not meet our needs. When maximum use of prepayment through private insurance comes about, the financing of the health care of the remaining indigent, by local governments and existing Federal programs, will undoubtedly be reduced to smaller and more easily managed proportions.

This proposal may not be popular, with that indeterminate number of persons who expect something for nothing, who anticipate free medical care although to its provision they have made no prior contribution. But to the mature American who expects to shoulder his full share of responsibility, to the one who asks what he can do for his country, rather than what it can do for him, this alternative plan will probably appear reasonable.

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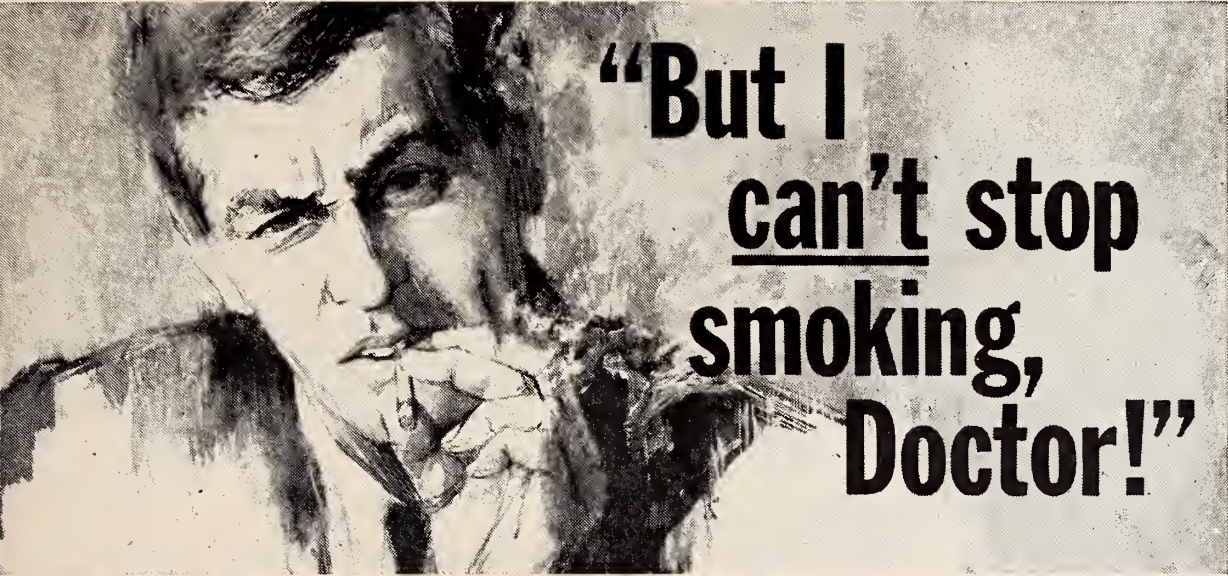
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## Blue Cross — Blue Shield Director Named



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Stephen M. Morris, president of Arizona Blue Cross, and Robert A. McCulley, M.D., president of Arizona Blue Shield recently announced the appointment of John C. Foster as the executive director of the combined plans. This appointment became effective February 5.

Foster previously was executive director of South Dakota Medical Service, Inc. (Blue Shield), headquartered in Sioux Falls and has served in this capacity since 1956. He spear-

headed the organization planning for establishment of Blue Shield in South Dakota. He also served as the executive secretary of the South Dakota Medical Association and executive secretary of the South Dakota State Board of Medical and Osteopathic Examiners.

Foster has had an extensive career in the health field. He was the founding executive secretary of the South Dakota Heart Association, and later the founding secretary of the South Dakota Mental Health Association. He has also been active in the South Dakota Tuberculosis and Health Association and the South Dakota Public Health Association. During World War II he served in the Army Medical Corps.

He is national chairman of the Kerr-Mills task force for the National Association of Blue Shield Plans, and is also secretary of District X Blue Shield Plans. He has served on the Advisory Committee to the American Medical Association on Public Relations. From 1951 to 1952 he served in the House of Representatives of the South Dakota Legislature.

"We are getting one of the top young executives in the prepayment field, and we are delighted that he has accepted. His abilities and knowledge in the areas of health and legislative matters will be of incalculable value to the Plans," said Morris and Doctor McCulley in a joint statement.

Foster is a graduate of Alma College, Alma, Michigan, and did graduate work at the University of Michigan. He is married, and has one son, Edwin, a college student, and two daughters, Denise and Diana. They will join him after the completion of their June school terms, and will reside in the Phoenix area.

---

### Arizona Ophthalmological Society Meeting

The first scientific meeting of the Arizona Ophthalmological Society was held on December 8, 1963 at the New York Giants' Motel in Casa Grande. The meeting was well attended (by approximately forty-five members of the Society).

Guest speakers included Dr. Hermann Burian, Professor of Ophthalmology at the University of Iowa Medical School in Iowa City, Iowa and Dr. J. Lawton Smith, Associate Professor of Ophthalmology at the University of Miami. Dr.

Burian discussed the problem of A-V Syndromes — while Dr. Smith presented three pearls regarding Applanation Tonometry, Diabetes and Ocular Syphilis.

After the scientific discussions, a short business meeting was held — followed by dinner.

The next regular meeting of the Arizona Ophthalmological Society will be held in conjunction with the Arizona Medical Association meeting in Chandler in the spring of 1964.



### Doctor Hamer Honored By AMA Colleagues

*The following is an excerpt from the official transcript of the action of the House of Delegates at the 17th Annual Clinical Meeting of the American Medical Association held in Portland, Oregon last December.*

On Monday the delegate from Arizona asked for the permission of introducing a resolution which did not get in your Handbook and I will ask for unanimous consent for that purpose. I hear no objections, so Dr. Beaton is recognized.

DR. BEATON: Mr. Speaker, Members of the House:

This accolade to Dr. Hamer is a resolution jointly sponsored by myself, representing Arizona, and more meaningfully by Dr. Hamer's colleague and friend of many years standing in this House, Eustace A. Allen of Georgia, as a spokesman for the other delegations in the House. May I add, sir, that since this statement has been prepared I have been beseeched by many who wished to co-sponsor it. I do not list them only lest by inadvertance I omit a name. Truly, this resolution is one brought forward by all the states. These clumsy words are mine but the voice is the voice of the House speaking fondly of one of its own.

Whereas, Jesse D. Hamer has contributed to the deliberations of the House of Delegates of the American Medical Association as delegate from his state for thirty years, a term of continuous dedication exceeded by no physician in the history of this body; and

Whereas, Dr. Hamer was vice-president of our Association in 1957-58, was a member of the Council on Medical Service from 1947 through 1953 and has labored fruitfully on many vital committees that have guided the onward course of American medicine; and

Whereas, This devoted man has now determined that he can join our deliberations no longer so that this 17th Clinical Meeting of the American Medical Association will be the last in which he can give us the benefit of his wise counsel; and

Whereas, Arizona is proud in its knowledge that it has been honored to give a great leader to the national scene of our profession; therefore, be it

Resolved, That the House of Delegates of the American Medical Association grant its official



Jesse D.  
Hamer, M.D.

commendation to Jesse D. Hamer for work superbly accomplished, as a final salute from his peers in this House, which he has served so long and loved so deeply.

Mr. Speaker, my personal debt to Jesse Hamer is immeasurable. I cannot redeem it. The debt of every member of this House and every member of this Association is in a very real sense equal to mine.

Mr. Speaker, I move this resolution, and on behalf of Dr. Allen and myself I beg the privilege of asking that it be adopted not by the regular calling for the ayes and nays, but by rising acclamation of the House.

SPEAKER ROUSE: The Chair asks you to vote as a Committee of the Whole by rising.

(Delegates rise and applaud.)

Dr. Hamer, we wish — we wish to assure Dr. Hamer he will be a welcome guest in this House at any time. Would you have a word, Dr. Hamer.

DR. HAMER: I rather think they have had enough words already today. The hour is late, but I do want to express a sense of deep satisfaction of having had the privilege of serving in this House so long from my state and during its early, formative years when I came to this House first with a membership of 99 members and at my own expense to see my own state develop into a strong organization operating, I think, efficiently on a par with other state associations, only, perhaps, on a smaller level. I think, too, that it's been one of the greatest satisfactions of one's life to have met and to have known the leaders of our profession during all these years from the president on down, the delegates and all.

And while I will not be a member again, let me assure you that I will show up at some of the meetings. Thank you very much.

(Applause)

SPEAKER ROUSE: Thank you, Dr. Hamer.



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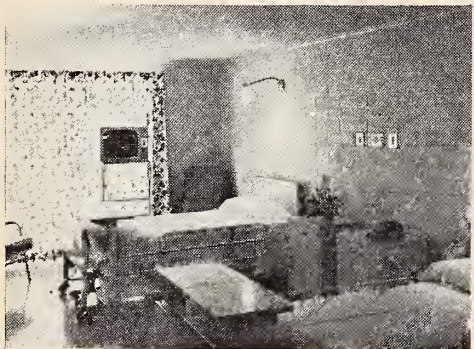


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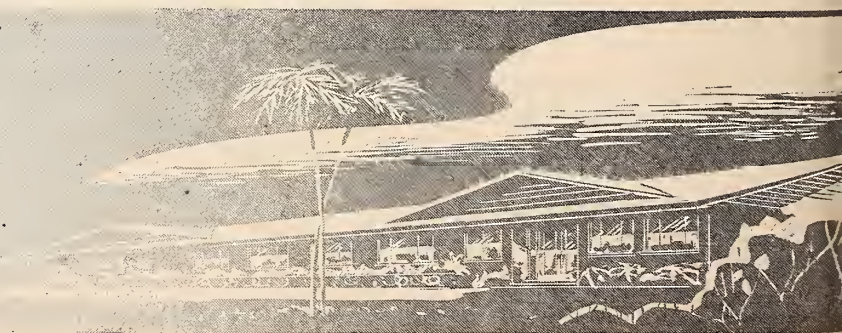
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#### **MARCH 7**

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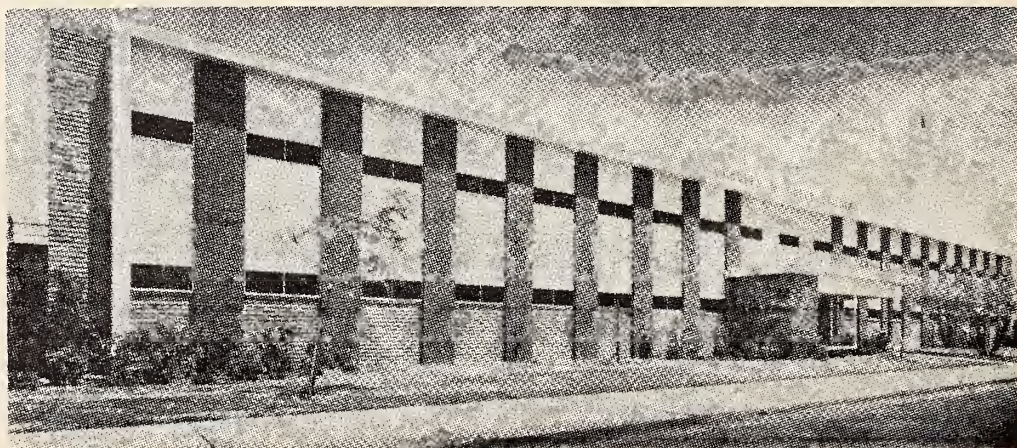
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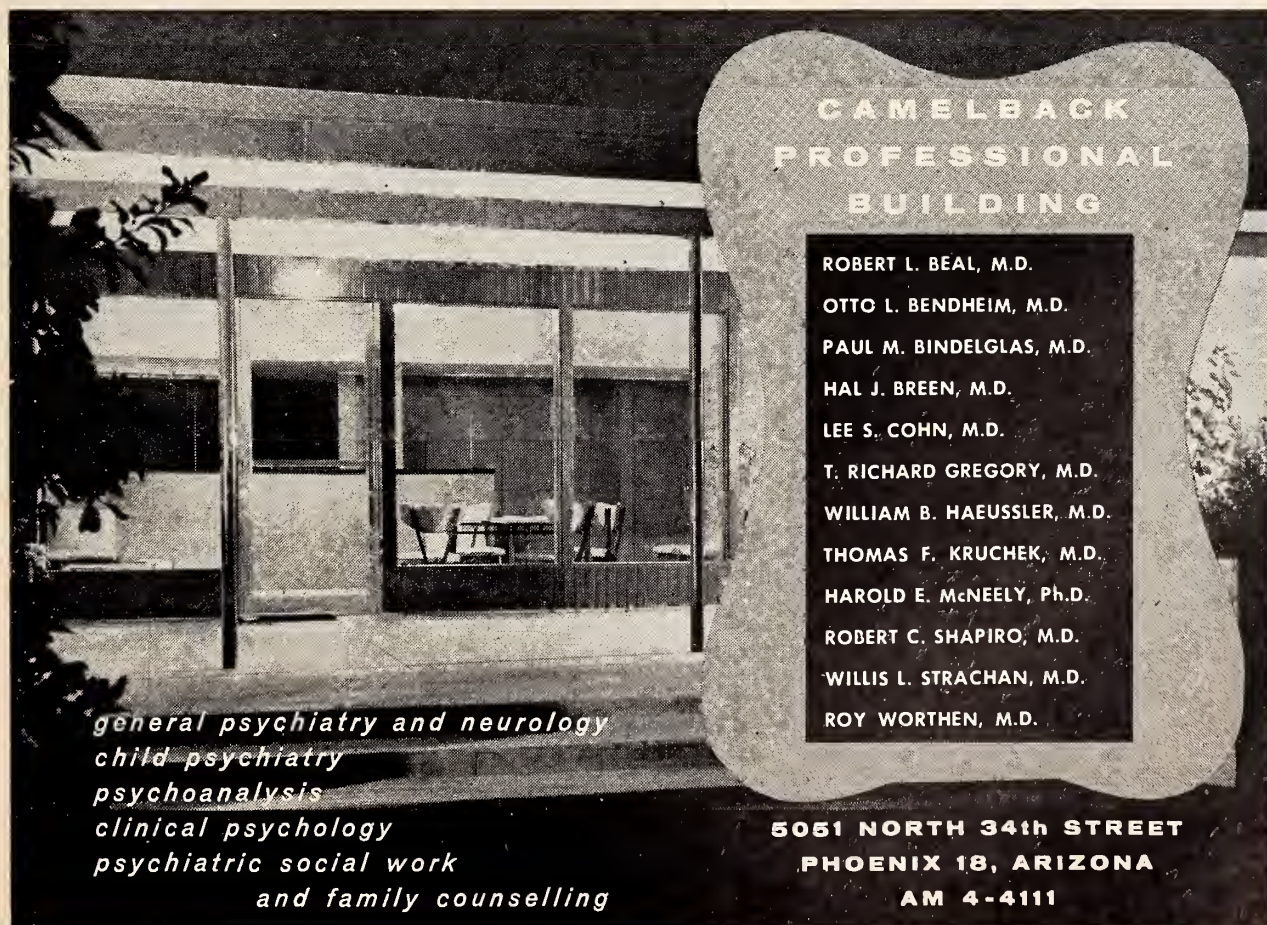
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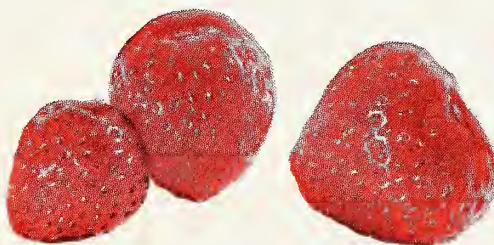


March, 1964  
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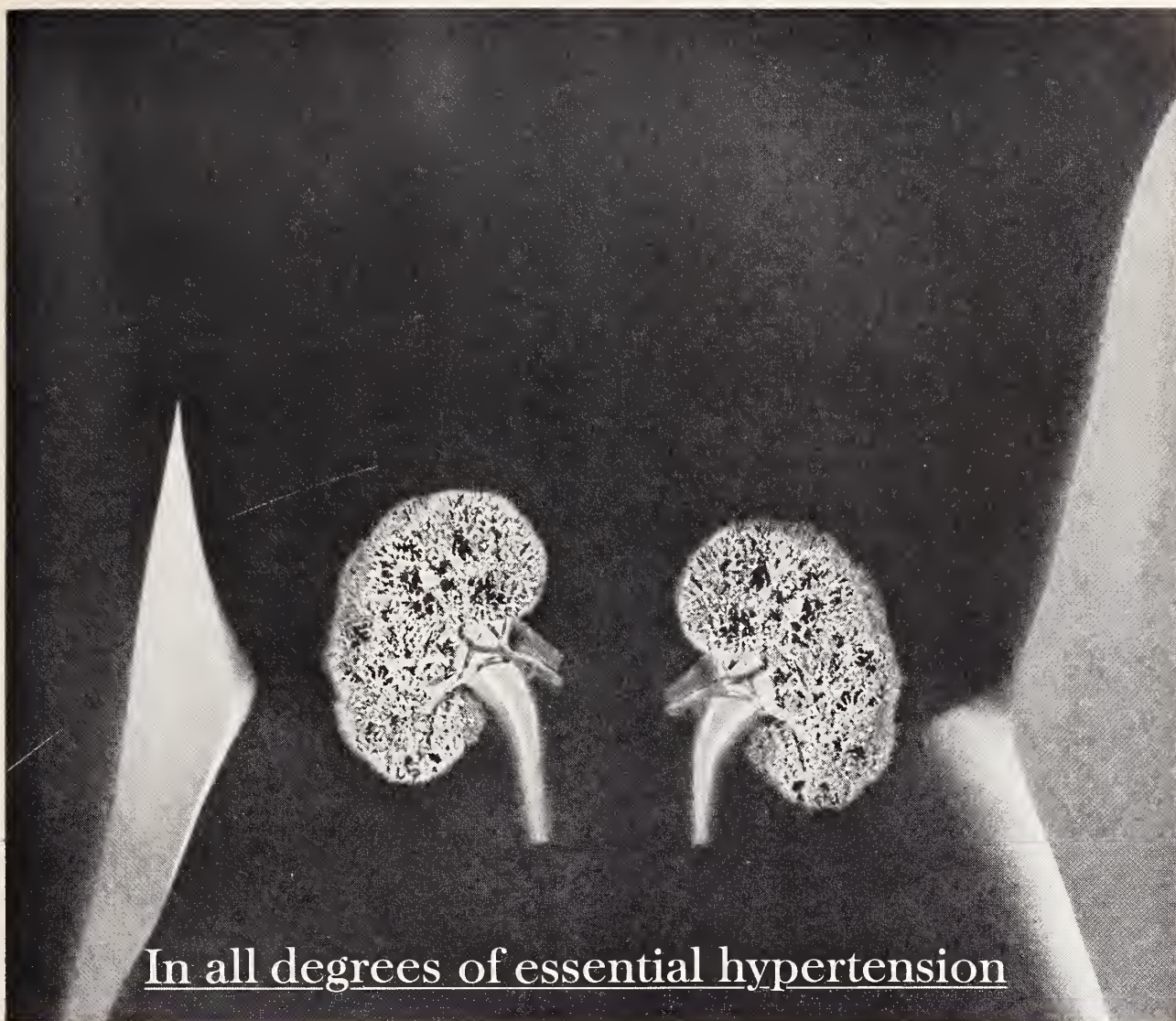
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JOURNAL OF ARIZONA MEDICAL ASSOCIATION

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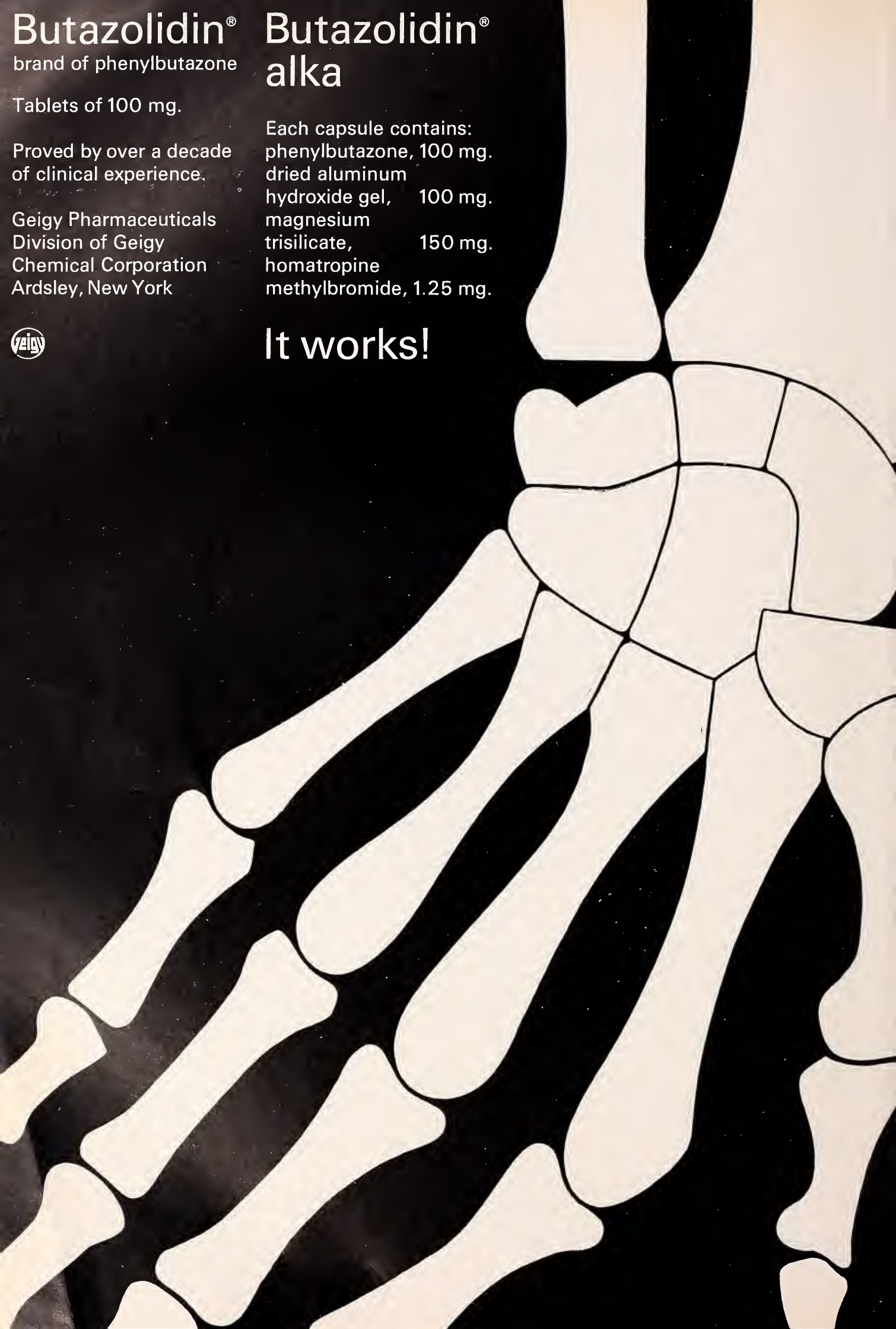
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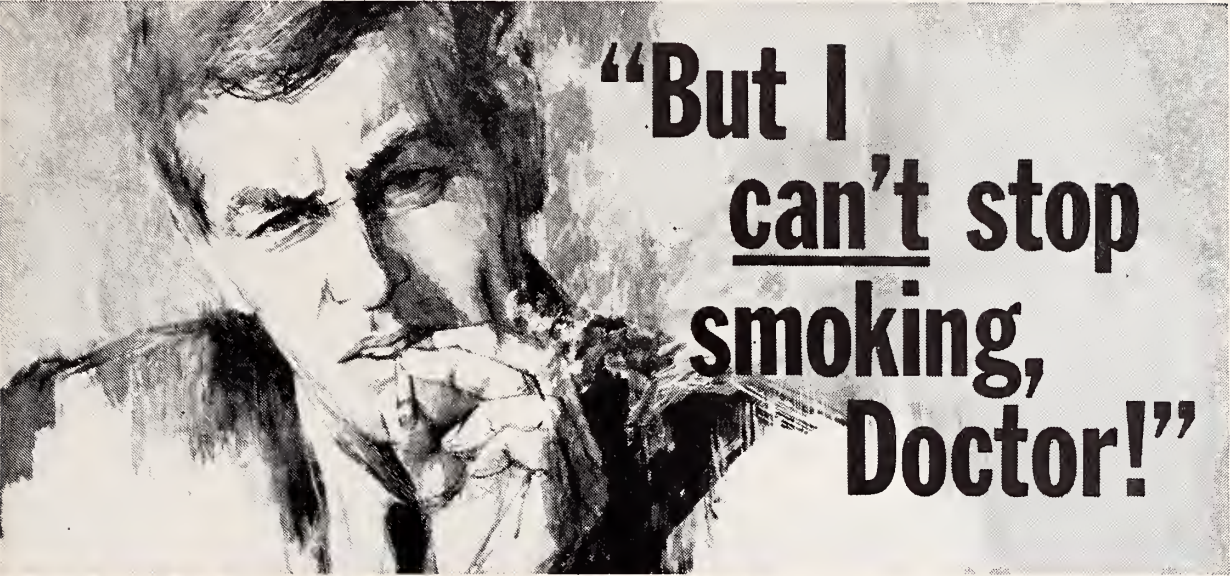
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Complete officer and committee listings will appear in the May and December issues.



## PROFESSIONAL LIAISON COMMITTEE

Meeting of the Professional Liaison Committee of The Arizona Medical Association, Inc. held Saturday, December 7, 1963, in the Pool Room of the Francisco Grande Motor Hotel, Casa Grande, Arizona, following luncheon, convened at 2:55 P.M., Hugh H. Smith, M.D., Chairman, presiding.

### ROLL CALL

#### Present:

Drs. Brewer, W. Albert, President-elect; McKhann, George G.; Payne, William G.; Rhoades, Albert L.; Smith, Hugh H., Chairman; Steen, William B., President; Wagner, Albert G.

#### Staff:

Boykin, Paul R., Assistant Executive Secretary  
Carpenter, Robert, Executive Secretary

#### Excused:

Drs. Hamer, Jesse D.; Henderson, Charles E., Secretary; Kurtz, Clyde W.; Rome, Harold J.; Secrist, Delbert L.; Smith, Noel G.

### MINUTES

It was regularly moved and unanimously carried that the minutes of the meeting of this committee held July 13, 1963, be approved as printed and circulated among the members.

## REPORTS OF SUBCOMMITTEES

### Allied Professions

Doctor Kurtz not being in attendance, no report was given; however, it was indicated that a written report was anticipated at an early date.

The central office was directed to duplicate the report of the subcommittee on Allied Professions on receipt thereof and disseminate the same among the members of the Professional Liaison Committee for their edification, any action recommended to await the next meeting of the committee.

### Careers and Arizona AMERF

Doctor Wagner presented his report of the subcommittee on Careers and it was indicated that a written report would be submitted for the edification of the Board of Directors.

It was determined to obtain the exact cost of the display stands and poll the committee by letter for approval or disapproval of the purchase.

Doctor Wagner presented his report of the subcommittee on Arizona AMERF and it was indicated that a written report would be submitted for the edification of the Board of Directors.

It was determined that the central office obtain the AMAERF displays for use at county and state medical meetings, sending at least one to each component county medical society for their consideration.

### Governmental Medical Staffs

Doctor Payne reported that no new problems had been directed to or come to the attention of the subcommittee.

### Nurses — Medicine and Religion

Doctor Secrist not being in attendance, no report was given.

### Public and School Health

#### State Health Advisory Committee—Arizona Congress of Parents and Teachers, Inc.

Doctor Rhoades appointed to represent ArMA and the Professional Liaison Committee as a member of the State Health Advisory Committee of the Arizona Congress of Parents and Teachers, Inc., reported that he had accepted such assignment and had attended two meetings of the group indicating a detailed report at some future date.

#### Arizona State Public Health Department — Legislation

The Professional Liaison Committee by motion regularly made and carried, recommends to the Board of Directors of ArMA, (1) that the salary limitation for the Director of the State Health Department be increased to \$22,000.00 per annum; (2) that the named personnel in the proposed 1964-65 budget of the State Health Department be urged added to the staff of the State Health Department; and (3) that we make no comment on the budget itself.

#### Hospital - Convalescent Home Licensing Rules and Regulations — Revisions

The committee held considerable discussion on the subject of Hospital, Sheltered Care Homes, Nursing Homes and Convalescent Homes Licensing Rules and Regulations, together with the proposed amendments thereto, offered by the State Department of Health, the Arizona Nurses Association and the Arizona Hospital Association.

The following recommendations and questions were posed:

1. General hospital licensure should require adequate laboratory and radiological facilities within the institution.

2. What is the exact meaning and effect of the phrase, "a graduate registered nurse licensed in Arizona on duty at all times", when applied to small hospitals in outlying communities?

3. Hospital licenses should not be issued to institutions that do not meet all requirements relative thereto as stated in the rules and regulations of the Arizona State Department of Health.

It was determined that Doctor Brewer would contact Lloyd M. Farner, M.D., Commissioner, Arizona State Department of Health, posing the foregoing question and suggestions on Monday, December 9, 1963, prior to the Department's meeting scheduled for December 10, 1963.

#### Related Non-Official National Organizations

Doctor Rowe, being unable to attend the meeting, filed the following report:

"There has been no subcommittee meeting since the last professional liaison committee meeting. Contact has been made from time to time verbally with other members, and there seems to be no news of significance to report. All of the national organizations that we have been in contact with have medical representation through various members of the society, and I think it could be stated that the medical association is well represented on these boards".

#### Water and Air Pollution

Doctor McKhann reported on the activities relative



# Arizona Medical Association Reports

to water and air pollution in Maricopa County and anticipated legislative proposals to the Arizona State Legislature.

It was regularly moved and carried that Doctor McKhann prepare appropriate resolutions for the support of these activities for the House of Delegates of ArMA, in 1964, from the Professional Liaison Committee.

## Woman's Auxiliary

The committee was informed of the appointment of Jesse D. Hamer, M.D. to its membership composite by the Board of Directors and on recommendation of the Chairman, approved the assignment of Doctor Hamer as Chairman of the subcommittee for the Woman's Auxiliary.

Doctor Steen suggested that an ad hoc Committee for the Woman's Auxiliary be appointed at this time and that the By-Laws be amended to include a standing Advisory Committee to the Woman's Auxiliary.

It was determined that Doctor Brewer would prepare appropriate resolutions for an Advisory Committee to the Woman's Auxiliary and Doctor Steen indicated he would appoint an interim ad hoc Committee at this time.

## OTHER BUSINESS

On recommendation of the Chairman, the committee determined, there being business for consideration, that its next meeting be called to convene in Casa Grande during February, 1964.

MEETING ADJOURNED AT 5:50 P.M.

Respectfully submitted for Charles E. Henderson, M.D., Secretary by

PAUL R. BOYKIN  
Assistant Executive Secretary

\* \* \*

## LEGISLATIVE COMMITTEE

Meeting of the Legislative Committee of The Arizona Medical Association, Inc., held Sunday, January 19, 1964, in the French Quarter of the Safari Hotel, Scottsdale, Arizona, convened at 10:15 a.m., Jesse D. Hamer, M.D., Chairman, presiding.

## ROLL CALL

**Committee Membership** — PRESENT: Drs. Brazie, Walter; Carlson, John S.; Curtis, Bruce N.; Frissell, Ben P.; Hamer, Jesse D., Chairman; Henderson, Charles E., Secretary; Jarrett, Paul B.; McDaniel, W. Shaw; Steen, William B., President; Truman, George C.

**Advisory Membership** — PRESENT: Drs. Brazie, Walter (Mohave); Daniels, Albert O. (Yavapai); Mowrey, Jack I. (Apache); O'Brien, Walter M. (Gila).

**STAFF:** Messrs. Boykin, Paul R., Assistant Executive Secretary; Carpenter, Robert, Executive Secretary; Ledwidge, Joseph A., Executive Assistant.

**GUESTS:** Dr. Joseph J. Likos, Phoenix.

**For Luncheon:** Sen. Paul L. Singer, M.D., Phoenix; Rep. Nelson D. Brayton, M.D., Miami; Rep. Charles W. Sechrist, M.D., Flagstaff; Rep. W. Paul Sherrill, M.D., Phoenix.

## COMMITTEE MEMBERSHIP

EXCUSED: Drs. Brewer, W. Albert, President-elect; Dexter, Richard L.; Manley, Derrill B.; Matte, Jr., Paul J.; Mr. Edward Jacobson, Counsel.

## ADVISORY MEMBERSHIP

EXCUSED: Drs. DeMarse, Donald F., Navajo; Grossman, Raymond, Cochise; Heim, Delmer J., Pima; LaMaster, Hugh, Greenlee; Matte, Jr., Paul J., Maricopa; Nelson, Donald E., Graham; Podolsky, Abe I., Yuma; Potzler, William R., Santa Cruz; Walker, Glen H., Pinal; Wood, Jr., J. Garland, Coconino.

## MINUTES

It was regularly moved and unanimously carried that the Minutes of the meeting of the Legislative Committee held February 3, 1963 be approved as printed and circulated among the members.

## ATOMIC ENERGY COMMISSION

Presented for review is a proposed act to be introduced in the Senate of the Twenty-sixth Legislature of the State of Arizona, Second Regular Session, "RELATING TO ATOMIC ENERGY; CREATING THE ARIZONA ATOMIC ENERGY COMMISSION; PROVIDING THE MEANS FOR THE STATE TO TAKE OVER CERTAIN RESPONSIBILITIES NOW VESTED IN THE UNITED STATES ATOMIC ENERGY COMMISSION; ESTABLISHING THE BASIS FOR ENCOURAGING THE DEVELOPMENT OF NEW PRIVATE INDUSTRIES; PRESCRIBING THE DUTIES AND AUTHORITY OF THE COMMISSION; PROVIDING FOR THE LICENSING AND REGULATION OF SOURCES OF IONIZING RADIATION; PRESCRIBING PENALTIES; AMENDING TITLE 30, ARIZONA REVISED STATUTES, BY ADDING CHAPTER 4, ARTICLES 1, 2 AND 3, AND MAKING AN APPROPRIATION."

The above referred to bill was presented to this Committee by R. Lee Foster, M.D. of Phoenix, for review and consideration, together with a summary of the Act. Special attention was directed to Article 2. Licensing and Registration, Section 30-671. Exceptions reading:

"A. The provisions of this chapter shall not be construed to limit the kind or amount of radiation that may be intentionally applied to a person or animal for diagnostic or therapeutic purposes by or under the direction of a licensed practitioner of the healing arts."

and Section 30-672. Licensing and registration of sources of ionizing radiation; exemptions reading: . . . .

D. A person licensed in this state to practice as a dentist, chiropractist, or veterinarian or licensed in this state to practice medicine, surgery, osteopathy, chiropractic, naturopathy or any other system or method of healing shall not be required by the commission to obtain any other license for the use of an X-ray machine."

On invitation, Joseph J. Likos, M.D. of Phoenix, appeared before the Committee to offer comments as regards the creation of an Arizona Atomic Energy Commission, its purposes and functions, and attempt to better inform the Committee as to this industrial measure, answering questions to clarify such intent and purpose.

It was moved by Doctor Brazie, seconded by Doctor Carlson and unanimously carried that this proposed act (if, as and when introduced into the Twenty-sixth Arizona State Legislature, Second Regular Session) be recommended accepted by the Board of Directors with the following amendments:



### ARTICLE 1 — ADMINISTRATION

#### Section 30-651. Declaration of policy

B.3. To coordinate these activities and studies with other groups and agencies, public and private, who are active in the fields of ionizing radiation, radiation sources and measurement, and atomic energy (strike the period, add a comma, and add:) AND CO-OPERATE WITH EACH IN ITS RESPECTIVE FIELDS. (Blocked words additional language as proposed as an amendment).

### ARTICLE 2. — LICENSING AND REGISTRATION

#### Section 30-672. Licensing and registration of sources of ionizing radiation; exemptions

D. A person licensed in this state to practice as a dentist, chiroprapist or veterinarian or licensed in this state to practice medicine, surgery, osteopathy, chiropractic, naturopathy or any other system or method of healing shall not be required by the commission to obtain any other license (delete: "for the use of an X-ray machine" and add:) BUT SHALL BE GOVERNED BY THEIR OWN LICENSING ACTS. (Deletion of words as quoted; blocked words additional language as proposed as an amendment).

### ARIZONA STATE BOARD OF PHARMACY — ARIZONA HOSPITAL ASSOCIATION

Called to the attention of this Committee by the Arizona Hospital Association is the matter of recent directive of the Arizona State Board of Pharmacy, giving written notice to drug manufacturers and wholesalers that the Pharmaceutical Board intends to enforce the Arizona statutes prohibiting manufacturers and wholesalers from selling drugs to any person or corporation not licensed by said Board. The State statutes permit physicians who are not licensed as pharmacists to purchase and keep drugs and medicines for emergencies in order to supply the immediate needs of their own patients. The Pharmaceutical Board is of the opinion that some physicians are purchasing drugs and medicines from wholesalers and manufacturers for resale and use to an extent that does not come within the statutory exemption.

Legislative counsel for the Pharmaceutical Manufacturers Association has suggested that the attitude of the Arizona Pharmacy Board will place smaller hospitals in an awkward position. Counsel for the Arizona Hospital Association does not believe that this necessarily will be the case, inasmuch as notice from the State Pharmacy Board does not in any way suggest that said Board proposes to limit or interfere with the sale of drugs and medicines by manufacturers and wholesalers to any hospitals which are duly licensed by the State Board. Under Section 32-1971, ARS, smaller hospitals of less than 100 beds may readily obtain a pharmacy license by engaging the services of a local licensed pharmacist or of a pharmacist inspector from the State Board, who is to consult periodically with the hospital administrator concerning the labeling, storage and dispensing of drugs. In this light, counsel for the State Hospital Association does not believe that there is any occasion for that body to take any action in connection with this matter, unless

and until it appears that the interests of member hospitals will be adversely affected by the declaration from the State Pharmacy Board that it intends to enforce existing pharmacy legislation.

It would appear that possibly the physician is primarily concerned in the declaration of purpose of the Arizona Pharmaceutical Board to enforce a provision of an existing statute. It would appear that in most instances the doctor of medicine is not interested and should not be in the sale of drugs for profit, especially under circumstances where a local pharmacist or pharmacists are available and practicing. Following due deliberation and discussion, it was suggested that the physician keep alert to this potential problem and keep the Association informed in instances of failure on the part of a pharmacist to render essential services and drugs specified in the filling of prescriptions.

### MEDICINE AND SURGERY ACT

During the First Regular Session of the Twenty-sixth Legislature of the State of Arizona there was introduced in each chamber Senate Bill 105 and House Bill 150, a proposed act relating to medicine and surgery; providing for continuation of the Board of Medical Examiners; prescribing powers and duties of the Board; providing for licensing and regulation of the practice of medicine and surgery; prescribing penalties; repealing Chapter 13 of Title 32, ARS, and amending Title 32, ARS, by adding a new Chapter 13. The measure failed of enactment, presumably due to the fact that the Legislature did not have sufficient time to evaluate the content and purpose. While certain committee hearings were held and certain amendments to the initial draft proposed, no final action is of record.

Counsel of this Association has prepared for reintroduction the 1963 revision of the Medicine and Surgery Act, with certain of the amendments suggested incorporated therein. It is understood that the measure will be introduced Monday, January 20, 1964, and it is the hope the Legislature will favorably consider the bill and cause it to be enacted into law.

It was regularly moved and unanimously carried that this Committee recommend to the Board of Directors that the measure proposed for reintroduction receive the approval of the Board with active support authorization.

### BASIC SCIENCE CERTIFICATES ACT

Introduced in both chambers of the First Regular Session of the 26th Arizona State Legislature was Senate Bill 104 and House Bill 149, amending the existing statute providing for Basic Science certificates. Similarly this measure failed of enactment in 1963 because of the inability of the Legislature to adequately consider the measure and take action. It is proposed to introduce the act with certain amendments proposed last year incorporated therein. It is anticipated such revision will be introduced in the Senate, Monday, January 20, 1964.

It was regularly moved and unanimously carried that this Committee recommend to the Board of Directors that the measure proposed for reintroduction receive the approval of the Board with active support authorization.



# Arizona Medical Association Reports

## KERR-MILLS IMPLEMENTATION

With reference to Public Law 778 (86th Congress) referred to as the Kerr-Mills Law, during the First Regular Session of the 26th Legislature of the State of Arizona, identical bills were introduced in each chamber, Senate Bill 39 and House Bill 45, providing for medical assistance for the aged, implementing the Federal Law referred to. It failed of enactment.

Introduced into the Second Regular Session of the Arizona State Legislature is Senate Bill 34 (Senator Singer and Senator Ahee), providing for the appropriation of \$310,000 to the State Department of Public Welfare to purchase medical and health insurance for certain low-income persons, sixty-five (65) years of age or older; amending ARS (adding Article 3.1, Sections 46-261 through 268).

Senator Singer reported that the bill as presented removed from the 1963 version the limitation on homestead property on which such person resides and the land contiguous thereto, which has a fair market value not in excess of \$8,000.00; removed the limitation of \$12.00 per month premium to cover medical and health insurance for each eligible person qualified to receive medical assistance for the aged; and provides for the purchase of medical and health insurance on a competitive basis, making it possible for both Blue Cross-Blue Shield and commercial insurance carriers underwriting this type of insurance to bid thereon.

It was regularly moved and unanimously carried that this Committee recommend to its Board of Directors active support of this legislation dealing with the implementation of the Kerr-Mills Law.

## ARIZONA STATE BOARD OF HEALTH

The Arizona State Board of Health seeks the support of this Association to three (3) proposed legislative measures to be introduced into the Second Regular Session of the Twenty-sixth Arizona State Legislature: (1) to raise the statutory limit of the Commissioner's salary to \$22,000.00; (2) authorization of a supplementary budget of \$85,120.00 for operation of the new Tuberculosis Sanatorium during the balance of the fiscal year 1963-64; and (3) an operating budget increase for the fiscal year 1964-65. The Board of Directors, in meeting held November 24, 1963, referred this request to its Legislative Committee for review and recommendation.

It was reported that Senators Brooke and Singer have already introduced Senate Bill 10 providing a supplementary appropriation of \$83,120.00 to the Arizona Tuberculosis Sanatorium for current operations, with an emergency clause. Through press release (*Arizona Republic*, December 12, 1963), it is reported that the Senate Appropriations Committee in meeting held December 11, 1963, praised the Arizona State Board of Health for the manner in which its budget was presented and for its effort of economy. The budget reflects an increase of \$500,000.00 of which approximately \$300,000.00 reflects the estimate of cost to finance the first full year of operation of the new Tuberculosis Hospital, due to open in March or April of this year.

It was regularly moved and unanimously carried that this Committee recommend to the Board of Directors that it approve the proposed increase in raising the

statutory limit of the salary of the Commissioner of the Arizona State Department of Health to \$22,000.00; the supplemental appropriation of \$83,120.00 to the Arizona Tuberculosis Sanatorium for current operations; and an adequate operational budget for the Department for the fiscal year 1964-65.

MEETING ADJOURNED FOR LUNCHEON AT 12:45 P.M.

\* \* \*

MEETING RECONVENED AT 2:45 P.M., ALL THOSE PRESENT DURING THE MORNING SESSION RESPONDING "AYE" TO THE ROLL CALL WITH THE EXCEPTIONS OF DOCTORS CARLSON AND McDANIEL, DOCTOR HAMER, CHAIRMAN, PRESIDING.

## PUBLIC NUISANCES DANGEROUS TO PUBLIC HEALTH

The Board of Directors in meeting held November 24, 1963, received from the Director of the Coconino County Health Department a proposal revoking Section 36-601, ARS, and offering a substitute therefor, dealing with Public Nuisances Dangerous to Public Health and providing that anyone maintaining any one of the conditions set forth in Section 36-601 is guilty of a misdemeanor, punishable by not more than \$200.00 or imprisonment in the County Jail for thirty (30) days or both.

Considerable discussions ensued and it was frankly admitted that the proposed intent and purpose of this suggested amendment is not clear.

It was moved by Doctor Frissell, seconded by Doctor Steen and unanimously carried that this matter be referred to the Arizona State Department of Health, calling the matter to its attention, should it care to review the proposal and offer comment.

## VIVISECTION

At a meeting of the Legislative Committee held December 2, 1962, the matter of the necessity for enacting legislation providing for the vivisection of animals was discussed. Counsel reported following review of existing statutes that from the wording thereof and of the Case Law Interpretations, it appears no vivisection legislation is required; further, such legislation would be required if, and only if, either animals were unavailable from pounds within or without the state or medical researchers were being badgered by nuisance suits. It was then determined to defer further consideration of the subject for a period of one year.

It was moved by Doctor Steen, seconded by Doctor Frissell and unanimously carried that further consideration and action in this regard does not appear indicated.

## COMMUNICATIONS

### Ownership of Drug Dispensaries

Representative John H. Haugh (Pima), by letter dated December 12, 1963, sought the views of this Association on the subject of ownership of drug dispensaries. The Committee determined to refer this matter to the appropriate committee (Professional Liaison Committee) for its consideration.

### Commission on Alcoholism

Karl E. Voldeng, M.D. of Phoenix, by letter dated



January 6, 1964, presented for the consideration of this Association, a proposed act desirable to be introduced into the Second Regular Session of the House Twenty-sixth Arizona State Legislature, an act 'CREATING A DIVISION OF THE DEPARTMENT OF HEALTH TO BE KNOWN AS THE COMMISSION ON ALCOHOLISM AND PROVIDING FOR THE APPOINTMENT OF COMMISSION MEMBERS AND THEIR QUALIFICATIONS AND PROVIDING FOR EXPENSE IN CONNECTION WITH THE WORK OF THE COMMISSION: PROVIDING FOR THE ELECTION OF OFFICERS OF THE COMMISSION: PRESCRIBING THE DUTIES AND POWERS OF THE COMMISSION: PROVIDING FOR GIFTS TO FUNDS OF THE COMMISSION: PRESCRIBING THE APPOINTMENT, QUALIFICATIONS AND DUTIES AND SALARY OF THE EXECUTIVE DIRECTOR OF COMMISSION: PROVIDING FOR REPORTS TO THE GOVERNOR AND DEPARTMENT OF HEALTH: PROVIDING FOR AN APPROPRIATION FOR THE COMMISSION: AND PROVIDING FOR SEVERABILITY OF THE PROVISIONS HEREOF.'

It was the determination of this Committee that the proposed legislation be referred to the appropriate committee (Professional Committee) of this Association for its review and recommendation direct to the Board of Directors.

## Arizona HEW

General Counsel, representing the American Medical Association, has been advised by a Commissioner of Education of one of the western states that a concerted move seems to be developing to combine state departments of education, state departments of health and state departments of welfare in a single state administrative unit, to be called the Department of Health, Education and Welfare. It is understood the administrative unit would, in so far as possible, be modeled after the Federal Department of Health, Education and Welfare. This movement is called to the attention of the Association for its information. Any further developments to this end, coming to the attention of AMA, will be transmitted promptly for the edification of this Association.

Received. No further action indicated at this time.

## OTHER BUSINESS

### Good Samaritan Legislation

It was reported that three (3) bills have been introduced already into the Second Regular Session of the Twenty-sixth Arizona State Legislature, providing for non-liability of physician or surgeon rendering gratuitous emergency aid at the scene of emergency, referred to as Senate Bill 58, (Sullivan of Gila), House Bill 4, (Goetze of Maricopa) and House Bill 55, (Brayton of Gila).

It was regularly moved and unanimously carried that it be the recommendation of this Committee that Good Samaritan legislation receive the approval of the Association.

MEETING ADJOURNED AT 4:00 P.M.

CHARLES E. HENDERSON, M.D.  
Secretary

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Dr. Enelow

# A Brief Review of Clinical Psychopharmacology

by

Allen J. Enelow, M.D.

**Terse and useful comments on the tranquilizers and anti-depressant medications.**

**T**HERE are a great number of drugs presently available for the treatment of psychiatric illness. It often seems to be a list that grows daily. With extravagant claims to evaluate, the medical practitioner may be excused if he has difficulty in determining which compound to use, and under what circumstances. Failure to understand the empirically discovered indications with resultant disappointing results leads to unwarranted condemnations of any and all psychoactive drugs. Used wisely, they can be very helpful in the management of psychiatric patients. In no case can they be used as a substitute for a good communicative relationship with the patient.

Many of these compounds are so similar to others that one need not be familiar with a long list; a very few drugs will suffice for everyday use.

The classification to be presented is a composite of several similar classifications(1,2,3,4).

## **Group 1. The Phenothiazines**

All of the compounds in this group are considered "major" tranquilizers. They are capable of reducing extreme tension or agitation and in many instances have an anti-psychotic action. Some have even been shown to have the capacity to suppress delusions and hallucinations. As a consequence, they are primarily indicated for psychotic patients — rarely if ever for neurosis.

The most severe degrees of neurotic anxiety, particularly of the pan-phobic type, will sometimes respond only to phenothiazines. Such patients may sometimes be borderline psychotics.

The anatomic site of action of the phenothiazines differs from the older barbiturates which, in general, act most strongly on the cerebral cortex. Although these compounds affect the cortex, their most potent action is subcortical and affects the structures associated with emotion, the reticular formation, hypothalamus and parts of the rhinencephalon.

The pharmacological action of this group includes the following: They block the sympathetic nervous system giving rise to parasympathomimetic effects, including atropine-like activity. They have anti-histamine properties. They are all anti-emetic, though to varying degrees. In sufficient dosage they are capable of producing sedation, hypnosis, and anesthesia. These dosages, however, generally are far in excess of therapeutic doses. They potentiate analgesics and anesthetics. In experimental animals, they block conditioned reflexes.(2)

The phenothiazines can be divided into three major subgroups. All have the phenothiazine nucleus in their chemical structure and differ only in the substituents.

The **dimethyl subgroup** includes chlorpromazine (Thorazine), promazine (Sparine), triflupromazine (Vesprin), and promethazine (Phenergan). These are the most sedative of the phenothiazines and are therefore most useful to control

Presented at the 10th annual meeting, Arizona Academy of General Practice, Tucson, Arizona, October 13, 1962.  
Associate Clinical Professor of Psychiatry, University of Southern California School of Medicine, Los Angeles, California.



## Original Articles

psychotic agitation, hyperactivity, and other psychotic symptoms for which a sedative tranquilizer would be desirable. They do not produce nearly the degree of sedation or hypnosis that the barbiturates would if given in sufficient amounts to control psychotic agitation. Phenergan is often useful in promoting sleep in psychotic patients.

The **piperidyl subgroup** contains only one compound of usefulness. This is thioridazine (Mellaril). It is used in the same situations as the dimethyl subgroup. It is probably the most sedative of the phenothiazines. In my experience it is particularly useful in controlling the acute manic state.

The third subgroup, the **piperazine phenothiazines** are the most potent, milligram for milligram, and the least sedative. They are therefore most useful in those psychotic conditions in which apathy and withdrawal are prominent. Unlike the other two groups, they are not contraindicated in depressed psychotic patients, though depression does not respond favorably when phenothiazines are administered. Because of their potency, side-effects are more frequent and more marked. Extrapyramidal symptoms are almost invariably produced if dosages sufficient to be therapeutically active are given. These drugs should therefore be given together with an antiparkinsonism preparation. The piperazine compounds often suppress delusions and hallucinations in schizophrenic patients.

The chief representatives of this group are fluphenazine (Prolixin, Permitil), trifluoperazine (Stelazine), perphenazine (Trilafon), and prochlorperazine (Compazine). The two latter produce extrapyramidal phenomena more than any other phenothiazines, in my experience; though all phenothiazines do, to some extent.

### Group 2. The Rauwolfia Alkaloids

These drugs are particularly active in suppressing sympathetic nervous system activity, thus producing miosis, bradycardia, and increased gastrointestinal motor and secretory activity. This discomfort plus a state of lethargy, a feeling of loss of contact with others, and depression are the reason these drugs are no longer used in psychiatry.

### Group 3. The Diphenylmethanes

This group lies halfway between the phenothiazines and the minor tranquilizers. They are unlikely to produce severe side-effects, though

in rare instances Hydroxyzine can produce pseudo-parkinsonism. They all have marked anti-histamine qualities, have an atropine-like effect, and prolong the action of barbiturates. They do not block conditioned reflexes in experimental animals(2). The chief site of action of these drugs is the hypothalamus. They include the following drugs:

Hydroxyzine (Atarax, Vistaril) is the most potent. In large doses (75 to 300 milligrams daily) it can be used for the borderline psychotic patient with marked anxiety. It has anti-spasmodic action which increases its usefulness. In small doses (30 to 75 milligrams daily) it is useful in the less severe neuroses where a calming agent is desired. It does not seem to produce habituation and rarely produces serious side-effects.

Diphenhydramine (Benadryl), though primarily used for its anti-histamine effect, is in fact a useful mild tranquilizer. It is also an excellent hypnotic. In addition, it appears to have anti-spasmodic action.

Benactyzine (Suavitil), has not been effective as a treatment for anxiety. It is also promoted as an antidepressant, but there is no evidence that it has any antidepressant activity.

### Group 4. The Modified Glycols (Substituted Propanediols)

All of the drugs in this group are derivative of the muscle relaxant mephenesin (Tolserol), which was derived from glycerol. They apparently depress the limbic system without affecting either the cortex or the hypothalamus.

These drugs have no effect on the autonomic nervous system. They relieve muscle spasm. In large enough doses they can cause reversible skeletal muscle paralysis. They raise the frustration tolerance level and decrease the effect of stress(2). Most of them have a depressing effect on the patient and are contra-indicated for depressed patients. They are habituating. The commonest one in use is meprobamate (Miltown, Equanil). Probably no drug is more misused than this one. Drug dependence and addiction to meprobamate are more common than generally realized and withdrawal symptoms, including convulsions have been observed. Toxicity is not often a problem, but skin rash, chills and fever, and gastro-intestinal disturbance have been reported. Marked drowsiness and ataxia can occur from fairly modest over-dosages. In general, this



drug should not be given for chronic anxiety nor to patients with a history of drug dependency.

Another similar drug is phenaglycodal (Ultran), about which less is known.

The minor tranquilizers in widest use are meprobamate, chlórdiazepoxide (Librium), hydroxyzine. Chlórdiazepoxide cannot be classified in this present scheme. It is more potent than meprobamate and seems to have similar indications. It is not especially effective in the psychoses, but seems to have a particular effectiveness in the anxious obsessive-compulsive patient. Over-dosage produces drowsiness and ataxia. Drug dependence is common and withdrawal symptoms may occur after prolonged use.

### Group 5. The Substituted Amides

This group includes the barbiturates, glutethimide (Doriden), methyprylon (Noludar), and others. Pharmacologically, these compounds produce sleep and, in larger doses, anesthesia. This appears to be due to depression of the reticular formation and the cerebral cortex. Barbiturates particularly depress functions of the cortical regions concerned with analyzing mechanisms of vision, audition, and other perceptive functions(2).

### Group 6. The Anti-Depressants

#### Subgroup 1. the mono-amine oxidase inhibitors (MAO)

These drugs have a stimulant effect on the central nervous system which is relatively short-lasting. They are frequently very effective as anti-depressants but have sufficient disadvantages to warrant great caution in their use. They can have serious toxic effects on the liver with jaundice and even death. This is particularly true of the hydrazine derivatives, perhaps not so true of the one non-hydrazine MAO inhibitor in use, tranylcypromine (Parnate). This drug is fairly rapid in action, easy to regulate, and very often effective. If there is no response after 10 days, however, it is pointless to continue it. The other MAO inhibitors in use are all derivatives of hydrazine and potentially very dangerous. They are slow in onset of action and difficult to regulate. They may cause tremors, overstimulation and insomnia (as may tranylcypromine also). The hydrazine MAO inhibitors include iproniazid (Marsilid), phenelzine (Nardil), nialimide (Niamid), and isocarboxazid (Marplan).

#### Subgroup 2. The dibenzazipene derivatives

These drugs are more like the phenothiazine compounds than the MAO inhibitors. Chemically, the dibenzazipene nucleus is very similar to the phenothiazine nucleus. The drugs have an inhibitory or suppressant central nervous system effect. The electroencephalographic pattern after administration of these drugs is similar to that produced by phenothiazines. These drugs are especially useful in agitated depressions.

Imipramine (Tofranil), has had extensive use. It is often effective in severe depressions with agitation. Its effect is slow, and depression may not begin to lift for 7 to 28 days after administration has begun. Side-effects are frequent and marked. They include flushing, excessive perspiration, dry mouth, constipation and postural hypotension.

**A**MITRIPTYLINE (Elavil), is chemically and pharmacologically very similar. Side-effects are less marked, however, and its action is not as slow as that of imipramine, though imipramine seems to help some patients with severe depressive states who are not helped by amitriptyline. The dosages are similar, 75 to 100 milligrams daily. Amitriptyline often is successful in controlling agitation in depressed patients. Most patients will complain of drowsiness for two or three days after administration is begun.

In order to find an effective antidepressant, it may be necessary to try several different ones. However, if the physician plans to discontinue one type and use a drug of the other type, he should interrupt medication for a week.

Deanol (Deaner) is a compound which is advertised as an antidepressant. It is chemically unrelated to the above compounds. Although uncontrolled clinical studies have been cited as showing it to be useful, the only controlled study of which I have knowledge did not indicate that it is an effective antidepressant.

In general, finding the correct drug for any patient is a matter of determining the target symptom one wishes to influence. In every case, treatment is more effective where the physician is able to establish a good communicative relationship with the patient.

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# The Masking of Physical Illness by Psychiatric Symptomatology

by

Paul M. Bindelglas, M.D.



Dr. Bindelglas

**The journal welcomes a contribution from one of Arizona's psychiatrists. While physicians are becoming psychiatrically oriented, the psychiatrists are remembering that they went to medical school. This is a healthy trend.**

**T**HE interrelationship of psychological difficulties to organic pathology and the parts that each play in the production of altered functioning are problems with which the medical profession has struggled only in relatively recent times. It is since the beginning of this century that the physical causes of some psychiatric illnesses have been definitely established, e.g., senile and presenile dementia (2) and general paresis. Only since the time of Freud (4) has scientific consideration been given to the part that psychological factors may play in the production of organic pathology and altered physiological functioning.

At first most physicians, whose training had been mainly in the biological sciences, were somewhat resistant toward consideration of emotional factors in the illnesses of their patients. As a result many obviously disturbed patients were subjected to excessive diagnostic tests and questionable treatments, while their emotional pathology was ignored.

Fortunately, there has been considerable improvement in this situation. Especially as physicians have become exposed to better courses in Psychiatry in medical school, they have become much more aware of the significance of emotional and psychological factors in their patients' illnesses. Not infrequently, this has resulted in physicians, who are not too perceptive of these

factors, being considered unsophisticated and behind the times. Hardly anybody wants to be thought of in this way. The result has been that the views of many physicians have become excessively focused on psychological factors (5, 6). Thus, whenever emotional symptoms are prominent, there has been an unfortunate tendency to attribute all of the patient's complaints to these factors without first giving enough attention to the investigation of possible organic illness.

There are several kinds of conditions in which psychiatric symptomatology may be prominent and thus may tend to mask an underlying organic illness.

For the sake of simplicity the conditions can be divided into four major categories:

## Category I

### The Psychiatric Patient with Physical Illness

A patient may present the clinical picture of a severely neurotic or even psychotic individual, but his mental illness may result in his presenting his physical complaints in such a bizarre or distorted way that they may be discounted and thus overlooked.

## Case I-A

The patient was a single, 34-year-old man who had been hospitalized twice within the year for paranoid schizophrenia. For six months following his last discharge, although still delusional, he was able to hold a responsible job and maintain himself in the community.

Presented at Camelback Hospital, Phoenix, Arizona, October 3, 1962.  
5051 North 34th Street, Phoenix 18, Arizona.



At this time there developed a severe, though transient, psychotic episode in which he became withdrawn and confused. During this period he became very angry at me, and accused me of causing his teeth to ache by hypnotic suggestion, and he said that this was carrying the treatment too far. I assumed that his complaint against me was strictly a psychotic expression in symbolic terms of an emotional problem, particularly in his relationship to me. As a result, I completely ignored the possibility that there was any organic significance to his physical complaints.

Fortunately, his acute psychotic episode (toothache and all) subsided after a few days. Nothing further was heard about these symptoms for three months. Suddenly he called to cancel an appointment, saying that he had a toothache and that I was up to my old tricks, implying that I was hypnotizing him again. I assumed he was entering another severe psychotic episode. However, when I saw him in his next session, his jaw was very swollen. This time, he finally got to a dentist.

In this case his bizarre psychotic explanation for the significance of his toothache, together with his obviously psychotic behavior, resulted in my completely discounting the possible organic significance of his physical complaint.

### Case I-B

The patient, a 29-year-old, single male, had, in addition to many neurotic problems, frequent somatic complaints. With an inappropriate smile, he would often complain of pain in his chest, in the pre-cordial region, and in his back. Finally I sent him to a competent internist who did a thorough work-up and found some limitation of motion of the back. However, he felt that this was muscular spasm related to nervous tension. I have since heard from a colleague that the patient had an operation for a ruptured intervertebral disc.

Again, since the patient had multiple vague, somatic complaints with inappropriate affect, and since he was referred by a psychiatrist, a competent internist discounted the significance of the findings of his examination. In this regard, it has not been uncommon for me to hear from patients that they don't want their medical practitioners to know that they are seeing a psychiatrist. They feel that as soon as their physicians are aware of this, their attitudes toward them change, and they do not take their complaints as seriously as they did before. Of course, there may be some element of neurotic distortion in this feeling, but it nevertheless occurs often enough to suggest that there is some element of truth in it.

### Category II Organic Conditions Causing Psychiatric Symptoms

Included in this group are the so-called "Soma-to-Psychic" illnesses.

They may be divided roughly into endocrine, nutritional, metabolic, neurological and toxic disturbances.

It is beyond the scope of this paper to describe these conditions in any great detail. All have been well reported in the literature. Rather it is the purpose of this discussion to re-focus attention upon their existence.

Hyperthyroidism (6), myxedema (7), hyperinsulinism (8), hyper- (10, 11,) and hypo-parathyroidism (12) are well known examples of clear cut endocrine disorders which may be associated with obvious emotional disturbances. Gonadal, adrenal or pituitary malfunctioning can also contribute to psychiatric problems and symptoms (14, 26).

Endocrine disturbances, when they are mild or in their early stages, may go undetected unless one is alert to them. Though the hormonal imbalance may be insufficient to produce obvious physical signs and symptoms, the added stress to the individual from this condition may result in psychiatric symptoms in a psychologically pre-disposed individual (14).

**A**MONG the nutritional disorders, the psychiatric symptoms in classical pellagra from nicotinic acid deficiency are well known (6, 15). However, in its subclinical form, which can exist for years, pellagra may be mistaken for anxiety neurosis; and in a somewhat more severe form, pellagra can be confused with schizophrenia or manic-depressive psychosis. However, the response to nicotinic acid may often be dramatic.

Thiamin deficiency can also produce irritability and depression. It can simulate hysteria, anxiety states, and other neurotic or even psychotic mental aberrations (6, 15).

Nowadays, however, these nutritional deficiency states are rarely caused by the lack of only one vitamin. Also, one seldom sees the markedly severe deficiency states anymore, so the clinical picture rarely conforms to the classical descriptions of acute cases reported in the texts. Rather more frequent are mild chronic forms which may exist for years. These may present non-specific symptoms such as vague personality changes, restlessness, irritability, and difficulty in concentration. Needless to say, the relationship to nutritional deficiency is often missed (6, 15).

Another nutritional disorder, which is of particular interest because it is associated with mental illness, is the one that results from a Vitamin



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B<sup>12</sup> deficiency (6, 16). Mental symptoms ranging from mild depression to overt psychosis may precede the characteristic blood changes of pernicious anemia by many months. Since diagnostic tests are available (16) to determine such a deficiency, and since it will frequently respond to appropriate B<sup>12</sup> therapy, it is important for the physician to keep this condition in mind.

Among the metabolic diseases, acute porphyria (17, 18) is one in which the psychiatric symptoms may lead to an erroneous diagnosis.

Intracranial tumors (19, 20, 21, 22), abscesses (23), and other neurological conditions (24), such as general paresis, may give rise to psychiatric symptoms, including various hallucinatory phenomena, as their presenting complaints. This is especially true in slowly growing tumors. Psychiatric symptoms may be the only symptoms and may precede the development of neurological signs by months or even years (19).

**E**PILEPSY, both convulsive and non-convulsive, can produce obvious psychiatric symptoms which may obscure the true nature of the condition. Epileptics of long standing may develop an acute psychotic, delirium-like picture with confused, bizarre behavior, hallucinations and delusions. However, these usually clear within several days to several weeks. Thus the prognosis for the attack is generally favorable and it is, therefore, important to differentiate it from schizophrenia.

Non-convulsive epilepsy which produces various hallucinatory phenomena may also be confused with schizophrenia. Petit mal epilepsy in many instances may be attributed to such psychological explanations as blocking, inattention, avoiding unpleasant situations, etc., before the true nature of the condition is suspected.

Alvarez (5) reports many cases of seizureless epilepsy in which the main complaints are unexplained compulsive feelings and rage reactions. Since many of these cases respond very well to the anti-epileptic drugs, he laments that so many of them go unrecognized.

**D**ELIRIUM and toxicity in their various forms and manifestations are also causes of psychiatric symptoms which stem from physical conditions (3, 13, 27). An example from this group is the post-surgical patient with clouding of consciousness who is boisterous, hyperactive, confused and uncooperative. He may have some paranoid ideation, thinking "they" are trying to

kill or poison him; or in the midst of his severe pain, he may have some depressive feeling, saying, "I can't take it anymore, I'm going to kill myself", or "I wish I were dead." This used to be seen by the medical-surgical staff as a not uncommon reaction following surgery. The patient was considered to be "somewhat out of his head" or "talking nonsense" for a few days, after which the symptoms would generally subside.

Nowadays, because thinking in regard to the etiology of these conditions is directed mainly at psychogenic factors, there is a tendency to overlook the contributing physical pathology. The result is that the patient is immediately considered "psycho" and a psychiatrist is brought in. The physicians, nurses and hospital administrators are consequently agitated and apply pressure to have the patient transferred to a psychiatric hospital. Even though the patient is still manageable on the medical-surgical ward, they feel that such a transfer is necessary in order to provide the patient with specialized psychiatric treatment. Such a transfer can be quite ego deflating and emotionally traumatic. In addition, since most psychiatric facilities are not set up to provide the same quality medical-surgical care as a good general hospital, the patient is often deprived of the best available medical care and treatment. Of course, this does not mean to imply that there is not an important place for the psychiatrist and the psychiatric hospital in the treatment of post-operative psychosis. Certainly in the more severe or protracted mental disturbances, psychiatric hospitalization is necessary. However, many are milder and more transient, and so could really be treated in the general hospital.

**M**UCH has been written in the literature about the importance of underlying psychogenic factors in the psychiatric and physical symptoms seen in many of the organic conditions in this category. Psychodynamic explanations for the development of many of the "somato-psychic" states have been quite common. The above discussion in no way means to disparage the real significance of this work. Certainly most of these conditions are more apt to occur in emotionally unstable and psychologically predisposed individuals.

Further, it should be borne in mind that when mental and emotional symptoms occur, they will usually be quite consistent with the patient's



pre-morbid personality and his previous life experiences. The specific symptoms will often be exaggerations of his previous ways of coping with tension and anxiety. Even the hallucinations that may occur with a focal brain lesion frequently have, as their content, the expression of the patient's life problems. However, when the lesion is removed, the symptoms subside. Therefore, the presence of clear-cut psychodynamics, per se, does not rule out the possibility of concomitant or contributing physical pathology.

### Category III

#### Emotional Reactions To Physical Illness

In this group are conditions in which there is a prominent emotional reaction to an underlying physical illness or disability.

Because of the prominence of the emotional symptoms, the underlying physical condition which triggers them may be discounted, overlooked, or erroneously considered the result of emotional problems rather than its cause.

An important group in this category includes those patients with organic cerebral defects. In brief, some of the defects in organic brain disease are disturbances in the integration of sensory and perceptual stimuli, aphasic difficulties, specific associational defects, difficulty with abstract thinking, and problems in learning and responding in new ways to new situations. Also present frequently are greater distractibility and, particularly in children, hyperactivity. In addition, there may be memory impairment and disturbances in the sensorium.

THE patient reacts to his awareness of these limitations with feelings of anxiety, frustration and rage. That exasperated, frustrated feeling which one has when one can't remember something which is on the "tip of one's tongue" is the kind of feeling that some organics have with them a great deal of the time. The aphasic knows what a fountain pen is and what to do with it, knows that he knows what it is called, and yet he is unable to name it. How the patient responds to these feelings of frustration, anxiety and rage will depend, to a large extent, on his previous personality and on his particular ways of coping with strong emotional reactions. Some withdraw, some utilize obsessive-compulsive defenses; others become hostile and paranoid, and still others get depressed. Children frequently become over active and show be-

havioral disturbances. These children have particular learning problems which often go unrecognized and which may cause anxiety, restlessness and feelings of inadequacy. These can result in repeated conflicts with teachers and parents. There is sometimes too great a tendency to attribute the child's poor school performance to his obvious emotional and behavioral disturbance, without recognizing that the learning disturbance may come first and may in fact trigger the behavioral disorder. If recognized early, and with proper remedial educational help, improvement in the child's behavior can at times be accomplished (9).

Another condition in which there is an unfortunate tendency to confuse cause and effect occurs in so-called "compensation cases". Since there is the possibility of material gain through illness, it is quite appropriate for the physician to be alert to "emotional" causes interfering with the patient's recovery. However, the emotional reactions which are triggered by the physical condition may be mistakenly considered to be the primary cause of the difficulty.

The following case is an example of this point.

#### Case III-A

The patient, a 61-year-old male, had a history of a head injury about one and one-half years ago and was still unable to work. He complained of dizziness, weakness, fatigue, headache and some loss of memory. However, medical and neurological examinations over this period of time were said to be essentially negative. Since at times he appeared to be depressed and irritable, it was felt that his inability to return to work might be on an emotional basis, and so a psychiatric evaluation was requested.

During the interview he appeared to be depressed and he walked with a slow, careful gait. He seemed to be somewhat "hard of hearing" in that it was often necessary to repeat things several times. However, loudness per se was not the essential factor in helping him to "hear", but rather a slow repetition was necessary for his comprehension, which suggested the possibility of a mild aphasic defect.

The patient's speech was coherent and relevant, and he seemed cooperative and sincere. In response to questioning, he described his symptoms of dizziness, weakness, headache, memory loss and fatigue. He told with pride what a hard working man he used to be before the injury, and that he had worked fourteen years with one firm. Now he just sits around the house. There did not appear to be any hostility toward his former employer or toward the insurance company either on the part of the patient or his son who brought him to the office. Neither of them showed any interest in a large insurance settlement. The concern seemed to be sincerely on the patient's welfare.



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It soon became apparent that the patient had marked disturbances in both memory and orientation. He didn't know the name of the governor of the state, but he was able to pick it out of several names. He did not know who was the president of the United States, and he cautiously offered the name of Hoover. Later, after thinking a few minutes, he asked if it could be Kennedy. When I replied it was, he relaxed in his chair with a broad smile on his face. He did not know the month or the year, but did know the date which he said he remembered because it was the day of his appointment with me.

Thus the patient gave considerable evidence of organic brain disease to which he reacted with depression, irritability and somatic complaints. The basic problem, however, was organic and not emotional. Yet his obvious organic dementia was missed for one and one-half years by competent physicians who were too quick to see the problem as a "compensation neurosis", attributing his poor "functioning" to his obvious emotional symptoms.

### Category IV

#### Patient's Denial of the Significance of His Physical Illness

In cases in which the symptoms indicate the possibility of an illness with a grave prognosis, the patient may attempt to deny the significance of his symptoms by attributing them to emotional factors. At times he may give a fairly convincing picture of an emotional illness with the result that the serious physical pathology may be missed.

The following cases should illustrate this point.

#### Case IV-A

The patient, a 60-year-old married man, an attorney, was referred because of severe emotional outbursts. He had a "coronary attack" about one year ago and he stated that his emotional symptoms began several months after this attack. Following his coronary, he developed a polycythemia and had to return to the hospital. According to the patient, these difficulties produced a severe emotional disturbance which made it necessary to transfer him to the psychiatric ward of a city hospital. He was hospitalized for several months. However, since his discharge, he stated that almost every night he still got emotionally upset and disturbed the sleep of his wife and family.

From the history, it seemed that he had a fairly good relationship with his wife and children prior to his illness. In trying to get a clearer understanding of the emotional symptoms, it became evident that he really did not remember the episodes, and was relating only what his wife told him. He went on to state that his memory and powers of concentration were poor, and that he had great difficulty in reading. This patient stated that he had trouble sleeping at night because of shortness of

breath, but assured me that his overall physical condition was improving. He then gave me the name of a doctor at the hospital who, he said, could tell me about his physical condition in more detail. I was, however, unable to contact this particular physician (an intern). Instead I spoke to the resident physician on the ward (who knew the patient quite well). She stated that he had very serious heart disease which resulted in secondary polycythemia and that he had only about six months to live. I mentioned the name of the intern with whom I was asked to speak and she said spontaneously, "Oh, yes, he could never understand the seriousness of the patient's cardiac pathology." Interestingly enough, the patient did not refer me to the resident physician in charge of the ward, but to the intern who would minimize his physical illness.

In this case, the patient's presenting symptoms were not caused by an emotional disturbance, but rather by delirium due to cerebral anoxia. However, he had a need to deny the seriousness of his physical condition, and preferred an emotional problem to the physical one.

#### Case IV-B

An attractive, 40-year-old, married woman, the mother of two daughters, complained of abdominal pain radiating through to her back, of three months' duration. She stated she had gone to two physicians who gave her a thorough work-up which had proven to be negative. They then suggested that she see a psychiatrist.

The pain, she stated, started the day after the "Bar-Mitzvah" celebration of her nephew, the son of her sister-in-law. She then went on to describe at great length her hostility toward this sister-in-law. Since the onset of her symptoms, she stated that the pain was aggravated every time they went out to a large party. She then went on to say that recently many of her friends were having sons of "Bar-Mitzvah" age, and so they had been going to several such parties. She denied she was jealous or upset because she did not have any sons of her own.

She stated she was very attached to her father. During his terminal illness she said that she took care of him a great deal of the time. He died of carcinoma of the pancreas.

The patient spent much time describing her physical symptoms. She said she was unable to eat, had lost weight, and had severe pain. However, after she made her appointment with me, she stated that she started to feel a little better, and that the pain was no longer so severe. During the interview, she did not appear to be either in severe pain or acutely ill.

My diagnostic impression was psychoneurotic disorder, conversion reaction. She stated she had to see a psychiatrist immediately, and since I was going on vacation, I tried to refer her to a colleague. Later I learned that two weeks after I saw her, she became jaundiced. An exploratory laparotomy was performed. She was found to have carcinoma of the pancreas and expired two weeks later.

**I**N this case the patient knew only too well what her symptoms meant, and was trying



desperately to blind herself to their significance by attributing them to emotional causes. In cases like this one, if one is not alert to the possible organic significance of the physical symptoms, one's view can easily become entirely focused on the very interesting and seemingly obvious psychopathology and psychodynamics. It is still my feeling that this woman's personality structure was that of an "hysteric". What was missed, however, was the fact that her major difficulty was in the area of her physical pathology and not her psychopathology.

In such instances, psychiatrists in particular may be likely to miss the organic condition because of their natural tendency to concentrate on the psychological factors. It is, however, important to keep the possibility of physical conditions in mind because even in psychotherapy, where the emphasis is naturally on psychological problems, failure to be alert to the significance of physical factors may be detrimental to the patient. Not only may a physical illness go untreated, but certain emotional problems may also go undetected.

In my opinion, it is just as inappropriate for a patient with a high fever to keep his regular appointment at the psychiatrist's office, as it is for him to miss his appointment with a very minor cold.

Yet there is much less of a tendency to go into the psychological significance of the former which is frequently glibly dismissed as evidence of "good motivation".

Only by considering the influence of the physical factors can one see in clearer focus the patient's inappropriate response in ignoring his physical illness. One is then in a better position to investigate this psychiatrically.

Needless to say, physicians, no matter what their specialty, in order to do their best work, need to obtain as complete and accurate a picture as possible of all the contributing factors to the patient's lack of well being.

## Summary

For years many physicians have been quite resistant toward the consideration of emotional factors in the illnesses of their patients. However, in recent years, there has been danger that the pendulum is swinging the other way. Conditions in which the prominence of psychiatric symptoms may obscure underlying organic pathology present problems which deserve to be emphasized.

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## BOOKLET AVAILABLE

"The Pathology of Tumors" recently produced by the American Cancer Society, and edited by Drs. Loren V. Ackerman and Frederick T. Kraus is a broad perspective on the relationship between pathology and the diagnosis, treatment and prognosis of malignant disease. Stress is given to a practical application of pathology for the clinician, particularly with reference to "precancerous lesions."

This is available to you upon request, and at no cost, at the Arizona Division office, American Cancer Society, 4700 N. 12th Street, Phoenix, Arizona.

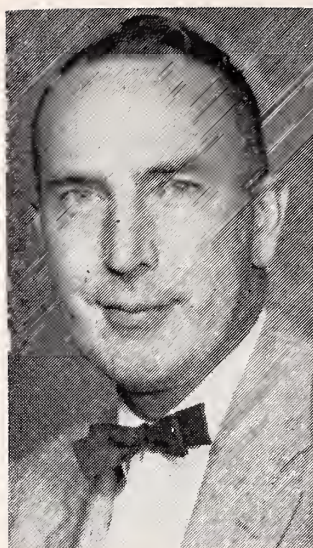


# Biomechanics of Spinal Bracing

by

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Dr. Lucas



Dr. Morris

The principles behind the use of spinal bracing become quite important and are helpful in the selection of the proper brace for support and immobilization of the lower back. The mechanical use of braces, their points of support and the mechanics of the erect or flexed position of the spine while wearing a brace or corset are reviewed in this article.

The mechanics of stress and strain within the spine and the functional use of the abdominal and trunk muscles are likewise outlined. The use of corrective braces for other conditions is a totally different field and is not covered in this article.

**K**NOWLEDGE of the normal mechanisms of spine support can provide much valuable information in regard to problems of bracing. Reviewed here are some of our findings derived from studies of the spine over the past few years, along with related aspects of the mechanics of the standard braces in current use.

## Braces in Current Use

It is generally accepted by orthopedic surgeons and orthotists that, regardless of design and purpose, spinal braces utilize the principle of three-point fixation. This method relies on a corrective or immobilizing force directed opposite to and between two counterforces.

Back braces may be divided into two groups:

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(1) corrective and (2) immobilizing, or supportive. Corrective bracing is generally for specialized treatment of scoliosis or kyphosis and will not be discussed here. Immobilizing braces may be simply divided into long and short types.

The prototype of the long or dorsolumbar brace is the Taylor brace (fig. 1). This consists of a wide, fitted pelvic band extending to the anterior axillary lines and two long posterior upright bars extending to the shoulders. The uprights are joined by a short transverse bar in the mid-dorsal region, and straps pass from the uprights around the shoulders and under the axillae to the transverse bar. A full-length abdominal apron attached by straps and buckles completes the brace (modifications include the Arnold, Magnuson, Bennett, and Steindler braces). In such a brace, the immobilizing force is applied posteriorly in the region of the thoracolumbar junction, while the counterforces are directed against the upper part of the chest or manubrium and the pubis anteriorly.



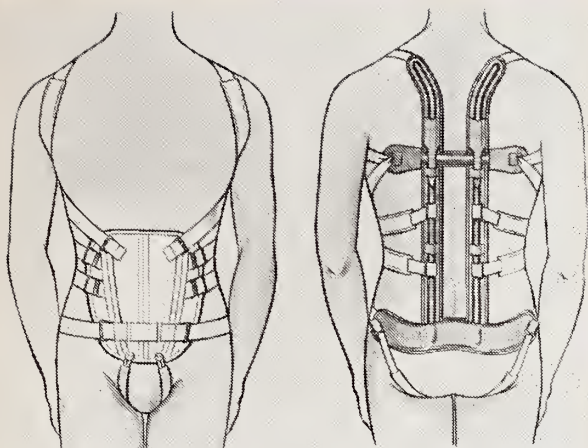


Fig. 1. Taylor dorsolumbar brace (by courtesy of C. H. Hittenberger & Co., San Francisco).

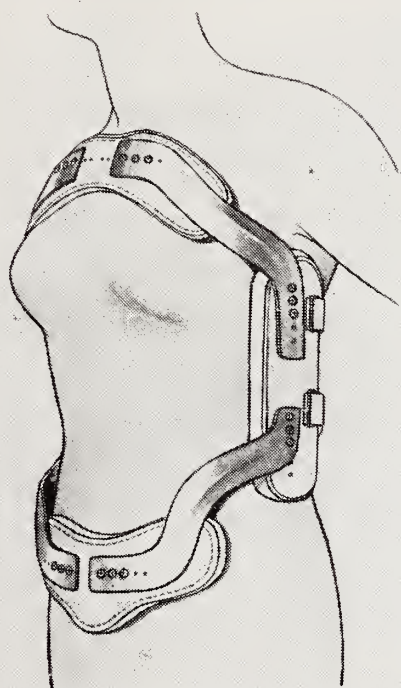


Fig. 2. Hyperextension brace (by courtesy of C. H. Hittenberger & Co., San Francisco).

The hyperextension brace such as that popularized by Lennox Baker and modified by Griswold, Jewett, and others, differs in design (fig. 2), but the principle and the points of fixation are essentially the same. The basic design of this type of brace consists of a rectangular metal frame over the front and sides of the torso which maintains hyperextension by backward pressure at the manubrium and symphysis pubis and forward pressure at the mid-dorsal region by a transverse strap.

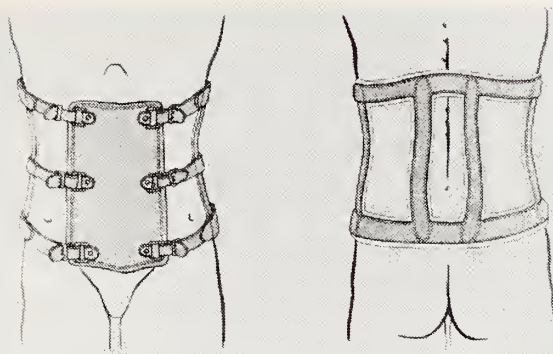


Fig. 3. Knight brace.

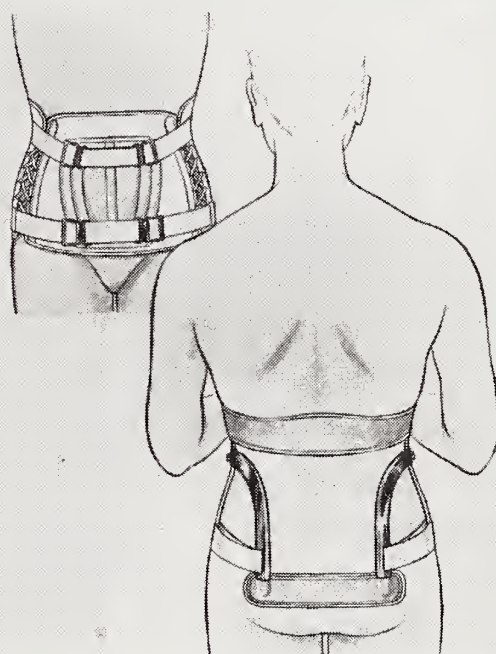


Fig. 4. Modification of Williams' lordosis brace (by courtesy of C. H. Hittenberger & Co., San Francisco).

The lumbosacral or chair-back type of brace is currently the most commonly used short spinal brace. Most of the various models (such as McCausland, Brackett, Wilcox, and Lipscomb), which vary principally in degree of rigidity, derive from the original Knight brace (fig. 3). This consists of a wide pelvic band and a transverse band at the eighth thoracic level joined by two posterior and two lateral uprights with an apron or corset front. The points of fixation anteriorly are the lower rib cage and epigastrium above and the pubis below. Posteriorly, the force is directed toward the mid-lumbar part of the spine.

A variation is the Williams' lordosis brace, which is designed to exert a constant corrective force on excessive lordosis (fig. 4). In this case,



## Original Articles

the corrective (and immobilizing) force is directed against the abdomen anteriorly and the counterforces posteriorly to the pelvis below and the thoracic part of the spine above.

**A**LSO included among the group of short spinal braces is the Osgood or Goldthwait sacroiliac brace (fig. 5). This brace consists of a wide sacral pad with two steel uprights and a steel reinforced abdominal pad connected by three supporting straps on each side. In addition to the hoop effect designed to attempt immobilization of the sacroiliac joints, motion of the lumbosacral joint is limited by fixation points at the abdomen and pubis anteriorly and the lumbosacral joint posteriorly.

In all the spinal braces, whether for correction or support, whether long or short, firm fixation at the base by a pelvic band or bands is of primary importance. Mechanically, the three-point system of fixation is fairly efficient when the corrective or immobilizing force is directed midway between the counterforces. For example, immobilization of the thoracolumbar junction is reasonably satisfactory with a long Taylor brace.

Immobilization of the lumbosacral region by this method is more difficult, and complete immobilization is impossible. The inadequate fixation of the pelvis and the short distance between the application of the immobilizing force and the lower or pelvic counterforce results in a small, inadequate immobilizing force at the lumbosacral junction. In fact, it has been shown that motion at the lumbosacral joint may be increased during trunk flexion when a long spinal brace is worn, because of compensation for decreased motion of the thoracolumbar region. (1)

Clinically, however, despite obvious incomplete immobilization and the variety of etiological factors in low back pain, bracing frequently results in symptomatic improvement. Apparently either partial immobilization or factors related in some manner to support of this region result in the improvement. In this regard it has been observed that, in certain cases of low back pain, compression of the abdominal viscera often relieves the pain. This compression may well be one of the most important factors in relief of symptoms. It may be provided by a tight abdominal bandage, a well-fitting corset, a brace with an abdominal pad which can be tightened, or a snug plaster body jacket.

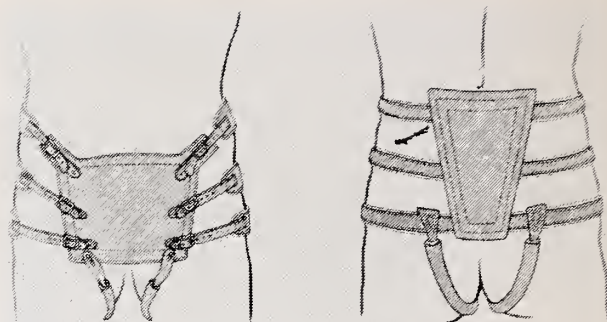


Fig. 5. Goldthwait (Osgood) sacroiliac brace.

In an effort to expand our understanding of the physiological principles of support of the spine and their possible application to orthotics, the role of the compartments of the trunk (thorax and abdomen) in helping to provide stability of the spine has been investigated.

### Physiological Considerations

The spinal column, which serves as a sustaining rod for the maintenance of the upright position of the body, may be considered to have both an intrinsic and an extrinsic stability. Intrinsic stability is provided by the alternating rigid and elastic components of the spine which are bound together by ligaments, while extrinsic stability is provided by the paraspinal and trunk muscles. The trunk muscles, especially those of the abdomen, form a contractile muscular wall about the body compartments which is capable of compressing the viscera. With the contraction of these muscles, the intracavitary pressures are increased, aiding in many bodily functions such as childbirth, respiration, return of venous blood, and, as will be shown, stabilization or support of the spine.

The isolated ligamentous spine behaves like a modified elastic rod. (2) When it is fixed at the base, its critical load — i.e., the greatest load it can sustain without buckling — is  $4\frac{1}{2}$  pounds, or much less than the body weight alone. The stability of the spine in the living human being is therefore dependent largely on the extrinsic support provided by the trunk musculature. The lack of inherent or intrinsic stability of the vertebral column and the importance of the trunk muscles are clearly demonstrated if one tries to hold an unconscious person upright.

During the act of lifting a heavy weight with the hands, the nucleus of the lumbosacral disk



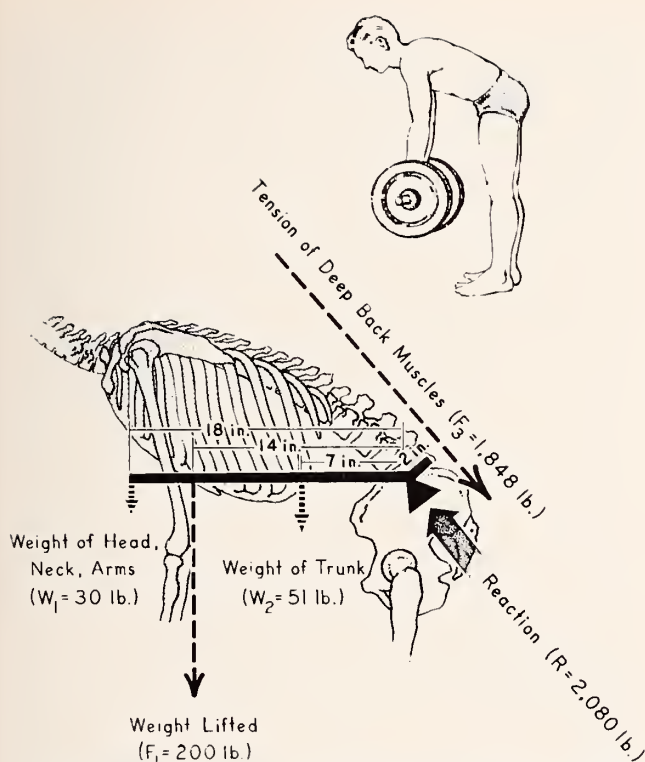


Fig. 6. Force on lower lumbar part of spine, omitting role of trunk.

may be considered as a fulcrum of movement and the arms and trunk as a long anterior lever. The weight being lifted and the weight of the upper part of the body are balanced by the contraction of the deep muscles of the back and the glutei maximi acting through a much shorter lever arm, the distance from the center of the lumbosacral disk to the center of the adjacent spinous process. If a 200-pound weight is lifted by a male of average size, the theoretical force on the lumbosacral disk — with the body weight also taken into consideration — can be calculated to be 2,071 pounds (fig. 6). (3)

**E**XPERIMENTAL studies of the isolated ligamentous spine (4-6) and investigation of injuries sustained by catapult ejection of jet pilots (7) have shown that such great forces cannot be tolerated. Compression tests on two vertebral bodies and intervening disk have indicated that failure occurs in specimens from young subjects at compressive loads ranging from 1,000 to 1,700 pounds. In specimens from older subjects the critical level was sometimes reduced to as little as 300 pounds. Catapult ejection of young jet fliers with a force of 20 G, or less than 2,000 pounds, has resulted in vertebral compression fractures in 27 per cent of the cases. Evidence of

failure is often difficult to see either on gross examination or by x-ray. It may consist of compression of a few spicules of bone, cracks in the end plate, or, sometimes, collapse of the plate. It is interesting to note that fracture of the vertebra always occurs before herniation of a normal disk.

When one compares the force calculated earlier (2,071 pounds), to which the lumbosacral area is apparently subjected during heavy lifting, with the force that the isolated spine is able to tolerate experimentally, a discrepancy is evident. It is obvious that the lumbar vertebrae and disks alone are not able to withstand the amount of force that may be imposed during exertion; additional support of the spine is necessary.

This additional support may be provided by the thorax and abdomen. Let us consider the spine as a segmented elastic column supported by the paraspinal muscles. This column is attached to the sides of and within two chambers: the thoracic and abdominal cavities. The thoracic cavity is filled largely with air and the abdominal cavity with a semifluid mass. The action of the trunk musculature converts these chambers into nearly rigid-walled cylinders containing (1) air and (2) liquid and semisolid material. Both these cylinders are capable of resisting a part of the force generated in loading the trunk and thereby of relieving the load on the spine itself.

**S**UCH a hypothesis was investigated by simultaneously measuring the intra-thoracic and intra-abdominal pressures and the electrical activity of the abdominal, intercostal, and back muscles during loading of the trunk.

As progressively heavier weights were lifted (up to a maximum of 200 pounds), the intra-thoracic and especially the intra-abdominal pressure increased (fig. 7). The trunk musculature became active simultaneously with the elevation of pressure and obviously was important in the generation of these pressures. As the weights and the force on the spine were increased, the activity of these muscles was increased.

When the trunk was loaded by the subject's pulling against a fixed resistance (strain ring), the intracavitary pressures and muscular activity increased proportionately (fig. 8).

Preliminary experiments indicated the importance of the intracavitary pressures in support



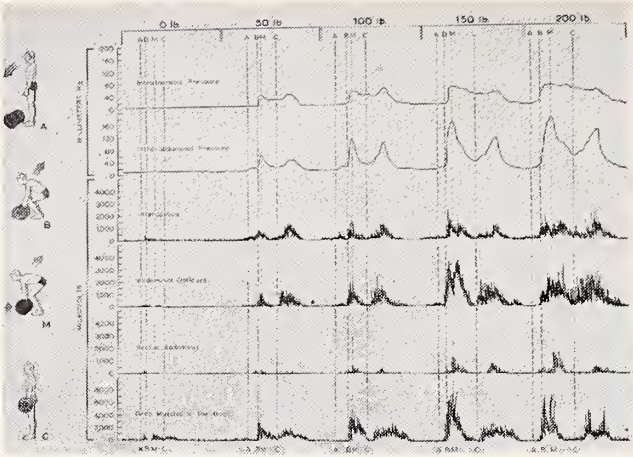


Fig. 7. Intracavitary pressures and muscular activity in dynamic loading of spine.

of the spine. The effects of increasing the intra-abdominal pressure by means of external application of pressure were therefore evaluated. For this purpose, a rubber bladder surrounding the abdomen was placed within a nonelastic lumbo-sacral corset and inflated to the limit of comfort.

While the resting intra-abdominal pressure was considerably elevated by the corset (5-25 mm. Hg), the maximum pressures generated in loading of the spine were comparable to those obtained without the corset.

**H**OWEVER, when the activity of the trunk musculature is compared during loading with and without the corset, a marked difference is obvious. The activity of the abdominal muscles is consistently and considerably decreased when the corset is worn, despite the fact that the intra-abdominal pressures may be the same. The intercostal activity was also noted to be decreased if the corset came high up on the chest over the intercostal muscles being studied. It appears, therefore, that the contracted muscles of the abdominal wall or the rigid external-pressure apparatus acts to contain the abdominal contents in a compressed state capable of transmitting force. When the compression or restraint is accomplished by an external apparatus, there is little need for contraction of the abdominal muscles.

To illustrate the role of the trunk in the support of the spine, it is possible, using the data obtained experimentally, to calculate the approximate forces on the lower thoracic and lumbar parts of the spine in the living subject when a weight of 200 pounds is lifted.

The spinal column may be considered as a flexible beam fixed at its base (the pelvis) and

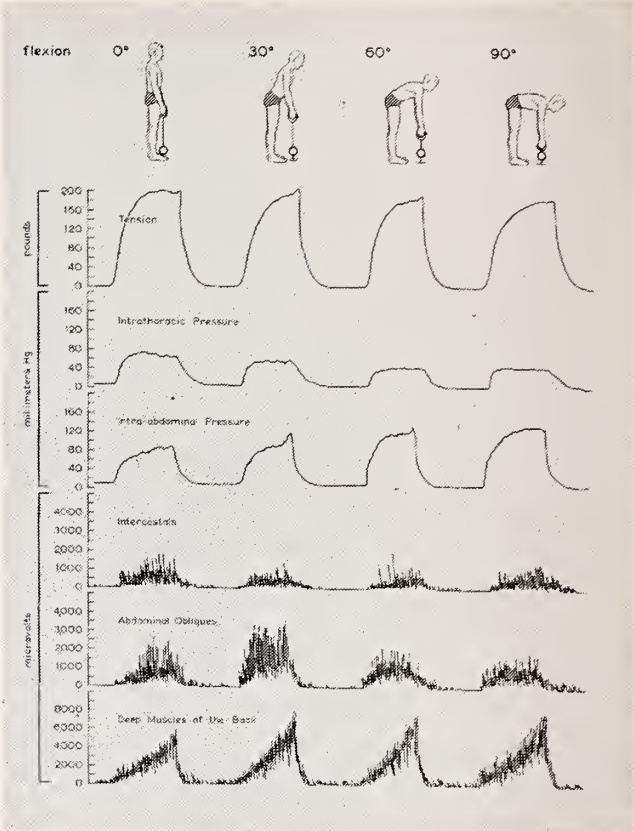


Fig. 8. Intracavitary pressures and muscular activity in static loading of spine.

eccentrically loaded at its free end. The thoracic and abdominal cavities may be considered as modified inflatable supporting structures for the beam.

With use of basic mechanical principles, the amount of force at the base (lumbosacral junction) of this beam can be calculated. For purposes of computation, we may consider a section just above the brim of the pelvis. The forces acting at this level include the weight lifted, the body weight, the tension of the deep muscles of the back and posterior thigh muscles acting on the back, and the net upward force exerted by the pelvis to counteract the net downward force of the intra-abdominal pressure. The last value is obtained by multiplying the average intra-abdominal pressure obtained during the lifting of 200 pounds (3 pounds per square inch) by the cross-sectional area of the abdomen at this level and subtracting the longitudinal component of the tension of the abdominal muscles. (3)

**W**HEN all the forces, their directions, and the distances from the fulcrum are determined, the reaction at the lumbosacral disk can be calculated. Thus instead of the theoretical force of approximately 2,071 pounds at the base of the



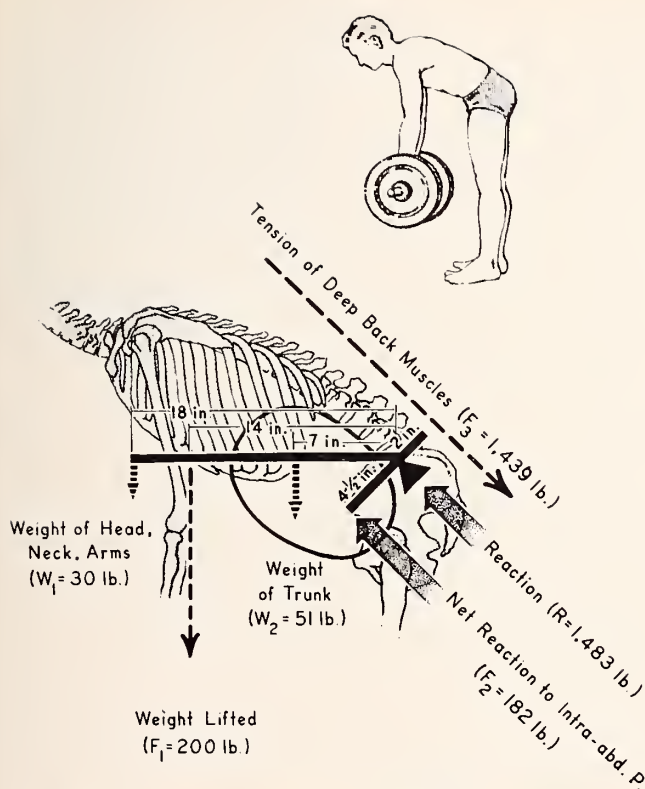


Fig. 9. Force on lower lumbar part of spine, including role of trunk.

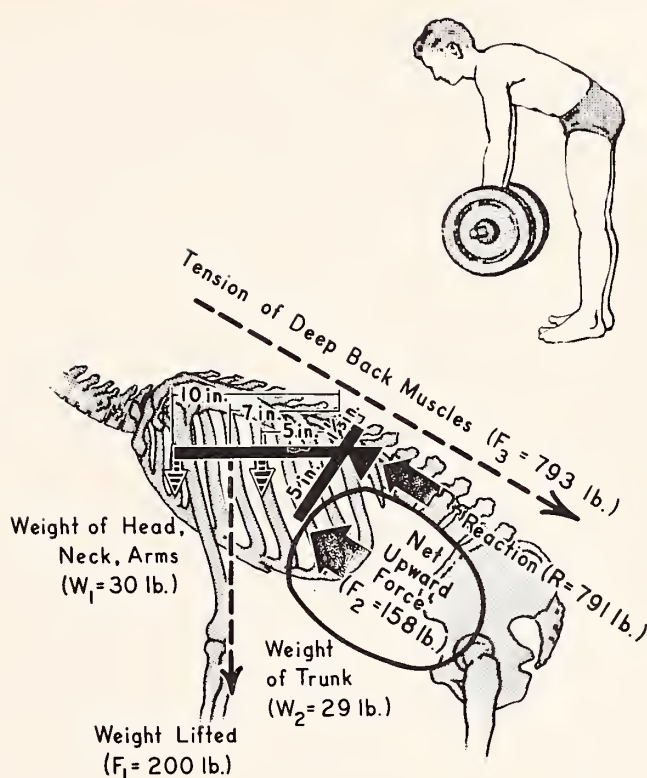


Fig. 10. Force on lower thoracic part of spine, including role of trunk.

beam, there is, with the so-called inflatable support of the trunk, a force of only 1,483 pounds — a reduction of about 600 pounds (fig. 9).

The theoretical force on the lower thoracic region of the spine, omitting the effect of the intracavitary pressure, may be calculated as it was for that at the base of the spine; it is found to be 1,568 pounds. However, by the relatively simple mechanism of the upward push on the diaphragm by the increased intra-abdominal pressure acting through a lever system, the force on the lower thoracic and lumbar part of the spine is reduced to only 791 pounds (fig. 10).

## DISCUSSION

Data on the mechanism of support of the spine have substantiated the hypothesis that, with the spinal column attached to the sides of and within two chambers, the abdominal and thoracic cavities, the action of the trunk musculature converts these chambers into nearly rigid-walled cylinders capable of transmitting part of the forces generated in loading the trunk and thereby of relieving the load on the spine itself.

It should be emphasized that the mechanism discussed here is the result of a reflex mecha-

nism. When a load is placed on the spine, the trunk musculature is involuntarily called into action to "fix" the rib cage and to restrain or compress the abdominal contents. The intracavitary pressures are thereby increased, aiding in support of the spine.

It may be concluded from the calculations that the actual force on the spine is much less than that considered to be present when support by the trunk, or the effect of the intracavitary pressures, is omitted. The actual force on the lumbosacral disk is approximately 30 per cent less, and that on the lower thoracic portion of the spine is about 50 per cent less than would be present without support by the trunk.

In addition to contributing to support of the spine, the increased intra-abdominal pressure may well produce an analgesic effect, since, as was mentioned earlier, it has been observed clinically that low back pain may be relieved by abdominal compression. Orthopedic surgeons regularly rely on abdominal strengthening exercises as a means of pain control for lumbosacral arthralgia. From the orthotists' viewpoint, abdominal compression is a built-in feature in most conventional low-back supports.



## Original Articles

Studies are currently under way on the effects of air-pressure bracing which provides, in addition to the compression, partial immobilization by the rigidity of the apparatus. Obvious advantages include comfort, adequate distribution of pressure, the possibility of varying the pressure, and consequent rigidity and ease of fitting because of lack of localized pressure areas.

Disadvantages are present also, such as heat-transfer problems and potential muscle atrophy resulting from disuse. Only extensive clinical trials and modification of apparatus will determine the value of and specific indications for this type of bracing.

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## SIMPLE RULES FOR KILLING A MEDICAL ORGANIZATION

Go to just enough meetings to maintain your membership. Arrive late. This saves having to listen to the minutes. Leave early. This gives the opposition one less vote to worry about. During the meeting, find fault with the work of the officers or other members. This makes them realize that you are interested. Never accept an office or committee appointment. It is more fun to criticize than to do things. If you are not appointed, get sore. If you are appointed, at least avoid the committee meetings, otherwise you will be in for some drudgery and systematic thinking. When asked at a meeting to give your opinion on an important matter, state that you have nothing to say. After the meeting tell your cronies what you should have said, and how things ought to be done. Do nothing more than is absolutely necessary, but when other members willingly roll up their sleeves and unselfishly use their abilities and time to get jobs done and problems solved, howl that the association is being run by a clique. Agree, by your silence, with everything said at the meeting, but be sure to disagree with it outside. At the meeting publicly vote to do something, and then go home or to your office and privately do just the opposite. Search out the negative aspects of meeting programs and comment loudly on these. If it is a dinner meeting, point out how much money is wasted on blowouts which make much noise and accomplish nothing. If no dinners are given, point out that the association is dead and needs a can tied to it. When a society officer or a state or national delegate takes action you believe unwise, or votes "incorrectly" on an issue, or voices a statement of policy with which you disagree, make it very clear that these people do not truly represent you and the rest of the masses. You can easily prove this point since you weren't even present at the meeting when these men were elected. Always hold back your dues until the last minute or don't pay at all. In summary, get everything you can out of the medical organization but don't give it anything.

Reprinted from the January, 1964 issue of the  
New Mexico Medical Society *Newsletter*.





Mrs. Stevens

# Arizona's History of Surgery

## Part II

by

Audrey D. Stevens

Let's continue along with Mrs. Stevens as she takes us further on her journey through the early years of medicine and surgery in Arizona. Relax and read as the author visits with some of your predecessors.

### CHAPTER II

#### Early Territorial Doctors

**D**URING the period of the Gadsden Purchase and the uprisings of the Indians, Arizona had the good fortune of having quite a few doctors (all were also called surgeons) who became nationally famous. Due to records being destroyed, sent to Washington, D.C. or lost, I could not find a case history of surgery done at any of the old Forts. It would have been much more difficult to write this history had it not been for the *Arizonian*, the first newspaper in Arizona, (1859), whose editor started the pattern of publicizing the usual events of the doctors and quite frequently the case histories.

In April, 1859, *The Arizonian* published the following item concerning Dr. Bernard John Dowling Irwin: "On the 22nd instant, Dr. Irwin, U.S. Surgeon at Fort Buchanan, amputated the thigh of a Mexican, who had traveled eleven days from Sonora to submit to amputation. This is the fourth capital operation the Doctor has performed within a short time past, and in each case with complete success."(1)

When Dr. Irwin was an Assistant Surgeon in the army he lead a successful command of soldiers against a band of Chiricahua Apaches

(1861) and for this he received a Congressional Medal of Honor "for distinguished gallantry displayed in engagement with Chiricahua Indians near Apache Pass, Arizona ."(2)

Another fort surgeon who should be mentioned is Leonard Wood. Dr. Wood was stationed at Fort Huachuca between the years of 1885 to 1889. During the Geronimo campaign he was a surgeon with Captain Lawton and made a record for himself as a doctor as well as a fighter. In March, 1898 he received a Congressional Medal of Honor, "for distinguished conduct in campaign against Apache Indians, in 1886 while serving as medical and line officer of Captain Lawton's Expedition." Later he helped organize the "Rough Riders" which, the men among themselves ealled, "Woody's Weary Walkers."(3)

Surgery in those days was done mostly in cases of extreme emergency and the surgeons had to be very resourceful. With the exception of the hospitals at the forts there were the mining hospitals and few county hospitals. These doctors had to use what ever equipment was handy. Many doctors used the kitchen table as an operating table.(4) At an Arizona Medical Association meeting in 1923, Dr. H. A. Hughes told of performing the first major surgery in the Salt River Valley in 1888. It was performed under a tree in the patient's yard. The reason for this odd location was that the house was so dirty he felt the patient's chances of recovery were better.(5) In an emergency Dr. Goodfellow

This is the second part of a five part series written by the wife of W. C. Stevens, M.D., of Kearny, Arizona.



## Original Articles

was known to have used a door supported by whiskey barrels as an operating table.(6)

The first surgeon to settle permanently in Tucson was Dr. John Charles Handy. He came to Tucson originally to find homes for three orphaned Indian girls and while there was called for professional help at the home of Mr. Samuel Hughes. Mr. Hughes asked Dr. Handy what he planned to do after he had found the little girls a home — since he knew that Dr. Handy had resigned from Fort Grant. Dr. Handy informed Mr. Hughes that he would stay in Tucson if he could be guaranteed an income of at least \$2,500.00 per year. Well, Mr. Hughes got up from his sick bed and went out to see the various inhabitants of Tucson! In a short time he returned with twenty five signatures of heads of families who had given their word to pay Dr. Handy one hundred dollars per year for his medical services. Dr. Handy resided in Tucson the rest of his life.(7)

In 1870 Dr. Handy had made headlines in a newspaper called *Weekly Arizona Miner* dated December 10, 1870. The exact wording of the article is as follows: "ANOTHER MAN SHOT AND KILLED — Word received at Fort Whipple late last week, that Dr. J. C. Handy, Contract Surgeon at Camp Thomas in the eastern part of this country, had shot and killed Mr. Hughey, sutler at the post. A woman, we are told — was at the bottom of the affair. Hope the matter will undergo proper legal investigation."(8) Obviously, Dr. Handy was exonerated of this shooting escapade as he became a surgeon at Fort Grant and then moved to Tucson in 1871.

In the records at Saint Mary's Hospital are at least two of his operations. One (1881) operation was for "piles." The patient was discharged fourteen days after the operation. Another (1885) the patient was in the hospital for eighty-two days because of a penetrating abdominal wound.(9)

The final newspaper articles on Dr. Handy concerned an abdominal gunshot wound. The first article on this subject stated that the "much loved and honored" Dr. John C. Handy had been shot on the streets of Tucson. After Dr. Handy was shot he walked, with people supporting him to his office one block away. There he was met by Dr. M. Spencer, Dr. H. W. Fenner and Dr. J. T. Green. He was then moved by carryall to his home a few blocks away.

Dr. George E. Goodfellow from Tombstone was called to do the necessary operation. Dr. Goodfellow acted as engineer of a special train (engine and caboose) to get to the aid of his friend.(10) "An incision was made on the left side about 7 inches long and the entrails taken out, which proved to be perforated in more than a dozen places. There was a large amount of blood in the cavity of the stomach caused by internal hemorrhage, which was removed." As the surgeon was finishing the last few stitches Dr. Handy died.(11)

I was so thrilled over this "Tid-Bit" that had I not gotten any other useable material I felt it was well worth the four hours round trip from Ray to Tucson. However, my husband's comment, "Well, Dr. Handy may have been a much loved man, but someone didn't love him," sent me back to Tucson.

So for the sake of you readers who are also "Who Dun-it" fans, I investigated more thoroughly and found the rest of the story of "The Deadly Bullet" which was the title of one of the articles I read.(12)

It seems Dr. Handy's wife was not one of the throng that "dearly loved" Dr. Handy. Quite the contrary — she wanted a divorce! Now Dr. Handy had told everyone that he would kill the "several worded adjective" who took Mrs. Handy's divorce case. In spite of all these threats Mr. Heney, an attorney in Tucson took Mrs. Handy's case.(13)

Not long after that Dr. Handy and Mr. Heney met on the streets of Tucson and a fight ensued. When they were finally separated it was discovered that Dr. Handy was shot.(14)

When Mr. Heney's case was brought before the court it was dismissed.(15) Years later after Mr. Francis J. Heney had moved to San Francisco, California he became famous as a Prosecuting Attorney. He passed away at the age of seventy-eight. Dr. Handy's son was one of the pall bearers.(16) In retrospect Dr. Handy might have been better off had he stayed away from men whose last names began with the same letter as his own last name.

No doubt Dr. Handy wanted Dr. Goodfellow to remove the bullet because Dr. Goodfellow was considered an old hand with gunshot wounds. From 1882 until the fall of 1891 he was not only the surgeon but the coroner at Tombstone and



probably had more experience with abdominal gunshot wounds than any other American surgeon of that time.(17)

Dr. Meade Clyne wrote me the following, "It is reported that Dr. Goodfellow, practicing in Tombstone in the early days and later in Tucson, obtained unusually good results in cases of gun shot wounds of the abdomen by closing the wounds in the intestinal tract with cotton thread, and not closing the wounds in the abdominal wall, sometimes enlarging them for wide-open drainage and irrigation."(18) It was the death of Dr. Handy that lead to Dr. Goodfellow's moving to Tucson.(19)

Dr. George E. Goodfellow started practicing medicine at the age of twenty.(20) He practiced in Prescott, Arizona for two years beginning in 1887, then was a "contract surgeon" stationed at Fort Lowell and in 1880 he entered private practice at Tombstone, Arizona.(21)

After a terrible fire in June, 1881 in Tombstone he performed plastic surgery as described by the patient, George W. Parsons, "I was knocked senseless by a dislodged beam and a large splinter had entered just under the skin glancing upward and just missing the eye, face quite flattened and nose all over it. Dr. Goodfellow made a plaster cast, cut away the deformity in the cast and then cut my nose loose from the bone and tacked it up in place so that the cast, with the aid of a wire run through my nose, held it in place. I eventually recovered emerging with a fine Roman nose, free from disfigurement."(22)

In 1927 Dr. W. V. Whitmore wrote an article "Early Medical Conditions in Arizona" and told about his early associations (1892) with Dr. George E. Goodfellow. "I have stated that there were no nurses here. The result was that, as far as Dr. Goodfellow's work was concerned, the nurse's work fell upon me. During the six months I served as his assistant, the greater part of his surgical operations were at the patient's home. At 8 o'clock on the morning of the operation I left the office with a carryall filled with impedimenta, viz: an old-fashioned, small, wooden operating table and five large satchels filled with instruments, dressing, anesthetics, etc. Instruments and dressings were arranged for use upon antiseptic towels."

"About the end of my first week here came our first operation. The wife of a railroad man had been confined by Dr. Spencer six weeks before. Infection followed and Dr. Goodfellow removed ovary, tube and part of uterus. My outstanding recollection of this case is that for about a week Dr. Goodfellow and I went to the house four times a day to irrigate that abdomen — 6 o'clock in the morning, at noon, 6 o'clock in the evening and at midnight. In self defense, the patient finally recovered."(23)

At the end of May, 1892, Dr. Goodfellow held a "Surgical Week." Two major operations were performed each day. Dr. Francis Haynes, of Los Angeles, assisted and Dr. Whitmore acted as nurse and anesthetist. The first case was a vaginal hysterectomy for cancer of the cervix. At that time large clamps were used to control hemorrhage and the surgeons were forced to use many clamps on Mrs. Handy — divorced wife of Dr. Handy. There was a persistent oozing of blood, twice in twelve hours the patient was given an anesthetic and the clamps readjusted. The malignancy returned in about four months but Mrs. Handy lived approximately a year.

The next day the same operation was performed at St. Mary's Hospital with no mishaps and the patient soon returned to her home in Bisbee.(24)

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*Part III will appear in Vol. 21, No. 6*



## The Bleeder —

# A Study of Different Laboratory Methods of Identification

by

E. A. Brucker, M.D.

This short and easy to read article describes an approach to the problem of finding the potential bleeder before he undergoes surgery.

### A Study of Different Laboratory Methods Available for Identification

THE problem of trying to predict who will bleed during surgery is not new. Many tests have been used in an attempt to determine before surgery the "bleeder". Until recently no single test or group of tests had been too successful.(1).

The principle methods used to determine pre-surgical bleeders before 1962 varied, but in general consisted of either the Ivy or Duke bleeding time and the Lee-White or capillary coagulation time. The Ivy and Lee-White procedures are very useful in a coagulation work-up but only about 60% of known bleeders can be identified using these two tests. The Duke test and the capillary coagulation time are poor substitutes.

The Ivy and Lee-White Tests were frequently used before surgery and although an occasional bleeder was missed, our experience with these procedures showed more patients with abnormal tests necessitating the cancellation of surgery and an extensive coagulation work-up only to find no coagulation defect. Table 1.

In 1962 Nye and Associates(2) published an article using the partial thromboplastin time (PTT) to detect latent bleeders. The results were so successful that this test has rapidly been adopted as a screening procedure for pre-surgical patients and patients with a past history of "bleeding."

Early in 1963 we began using one of the PTT methods but noted too many elevated values to justify using this test routinely. As a result we decided to evaluate the three principle methods using the procedures as described by the three companies. One-hundred unselected pre-surgical patients were tested. Since all of the methods

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have essentially the same normal values, i.e., 40-100 seconds, any test over 100 seconds was considered abnormal. The three procedures tested showed the following number of abnormal tests:

1. Procedure O had (1).
2. Procedure W had (16).
3. Procedure D had (2).

None of these patients bled during surgery.

The problem of abnormal PTT's resolved itself in our laboratory by changing to a different method. Since the survey we have used Ortho's Thrombifax method with excellent results. To complete our study we also evaluated the bleeding and coagulation time with the PTT. We selected another one-hundred pre-surgical patients. See table 2. There was no abnormal bleeding in this group of patients.

Tables I and II	Table I	Table II
Abnormal Lee-White Coag. Time	14	12
Abnormal Ivy Bleeding Times	2	3
Abnormal PTT	0	0
Total patients Tested	100	100

During the survey we had several patients who began to bleed while on anti-coagulant therapy. The PTT was prolonged in these patients and was probably due to a deficiency of factor IX and X, since their prothrombin tests were about 10%. There were no abnormal PTT's found in our daily prothrombin patients in the therapeutic range. A further study is now being done to evaluate patients who bleed during anti-coagulant therapy.

We were fortunate in having two patients with hemophilia (factor VIII) and one with Christmas Disease (factor IX) to test during our survey. All three had prolonged PTT's. (3)

### Summary

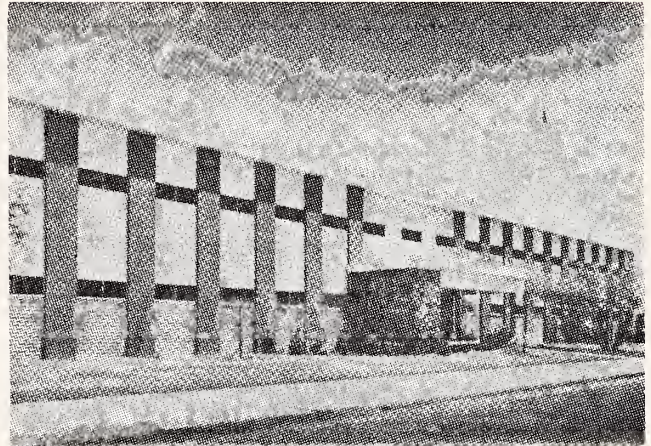
The Partial thromboplastin test (PTT) is an excellent test to screen pre-surgical patients and to identify patients with a past history of bleeding. In our laboratory the Ortho Thrombifax method gave the most consistent results. It is more accurate than the bleeding and/or coagulation test. It does not identify the defect in the coagulation mechanism.

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Acknowledgement: The author wishes to thank Miss Erie Jeeves for her help in the laboratory procedures.

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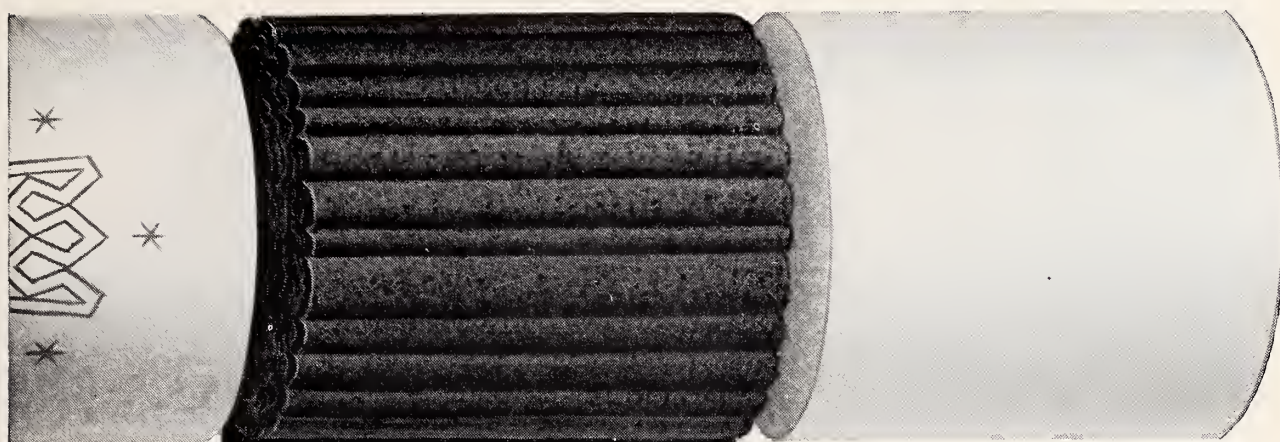
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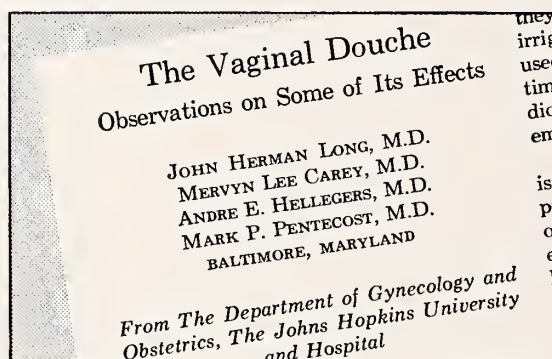
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"Each physician has his own idea of the value or harm of the vaginal douche and many have expressed such ideas in writing. Such opinions have been arrived at without any intensive investigation or observation of subjects using douches as compared to those not using them. The purpose of this study is to report our observations on three groups of patients, one taking no douches, a second douching with a medicated solution\* and a third douching with plain water."<sup>1</sup>

1. West. J. Surg., Obs. & Gynec.: 71:122-127, 1963

\*The medicinal powder used in this study was META CINE®, a scientifically formulated preparation containing: papain, lactose, citric acid, methyl salicylate, eucalyptol, menthol and chlorothymol.

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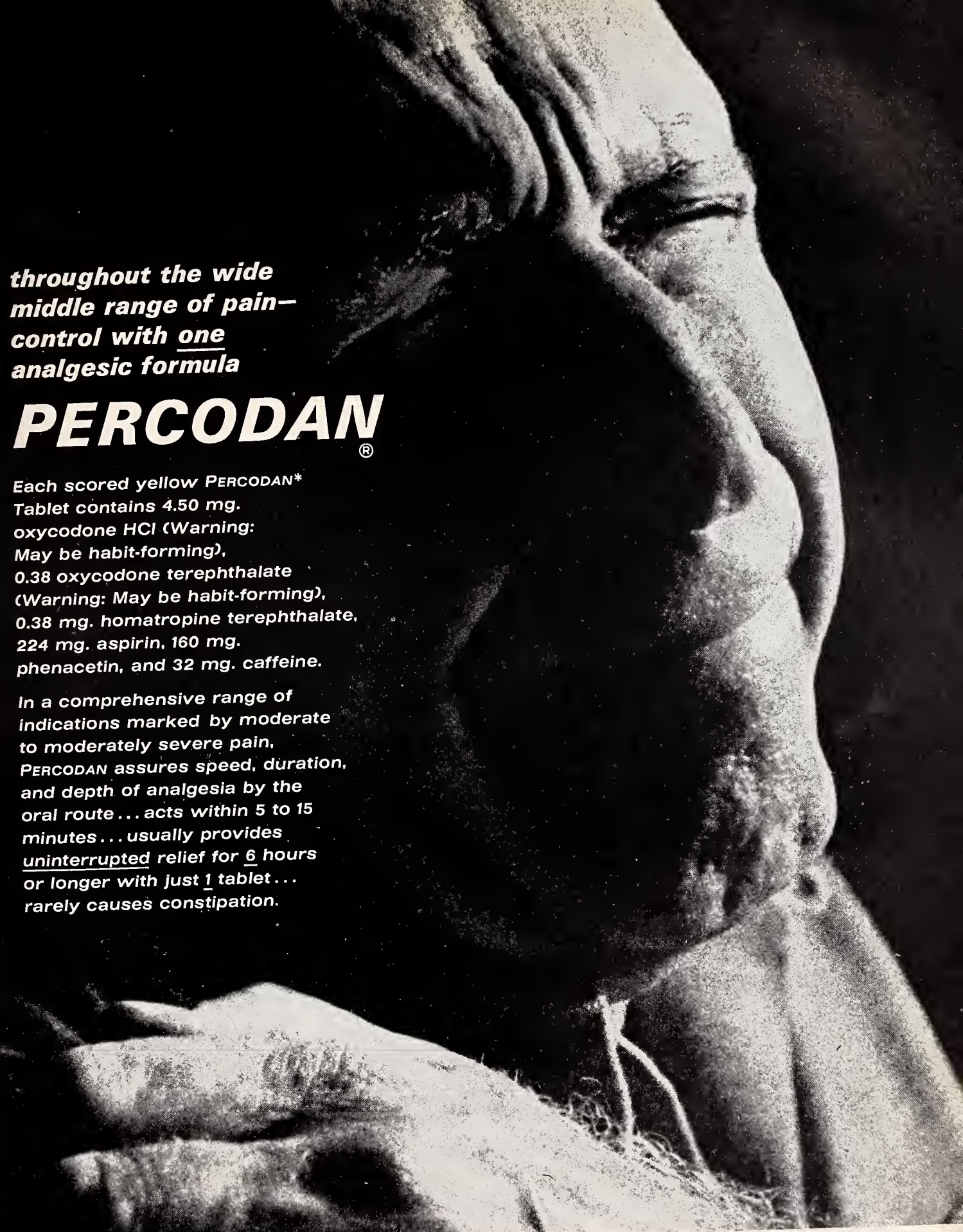
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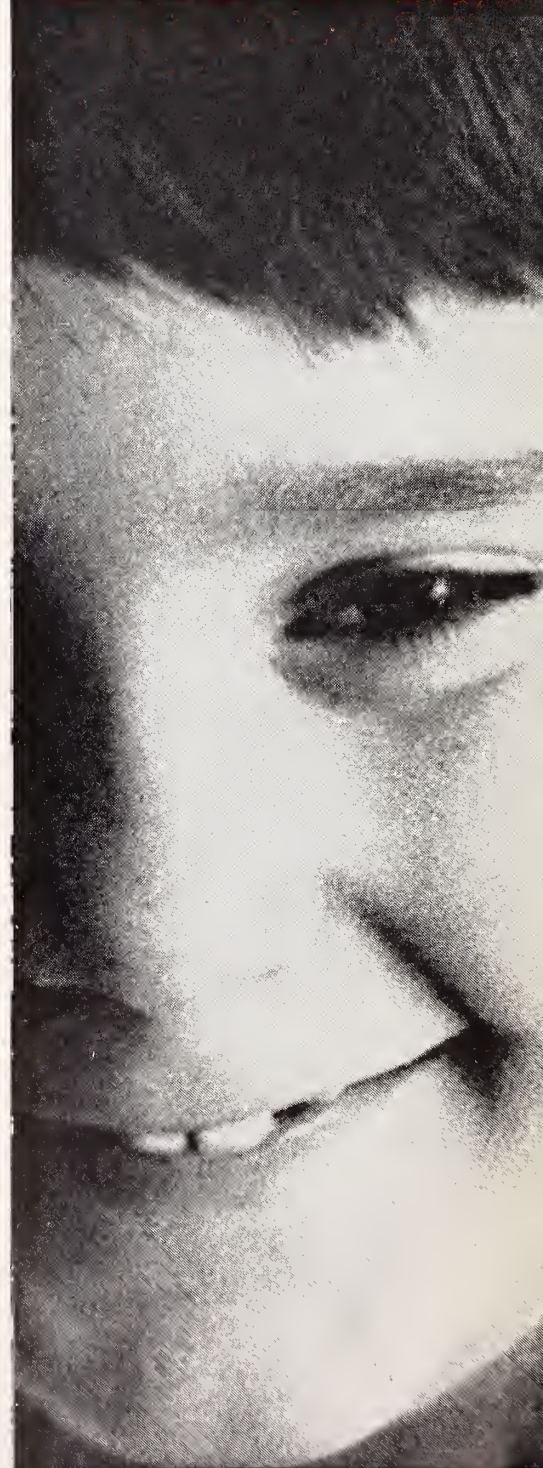
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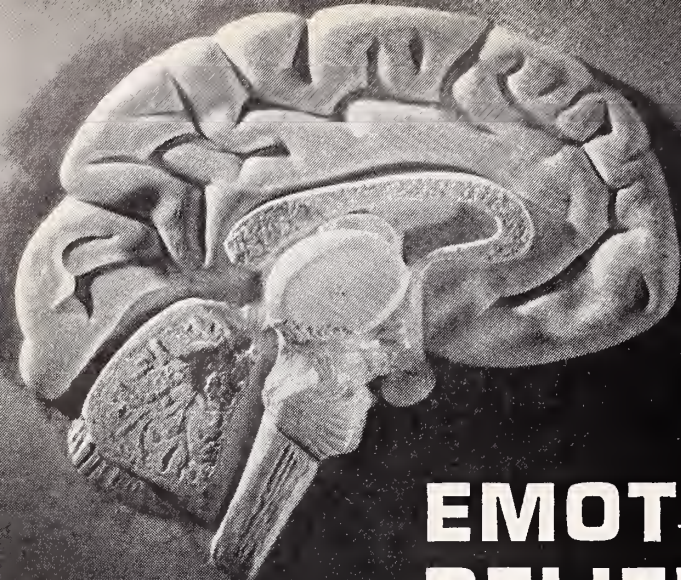
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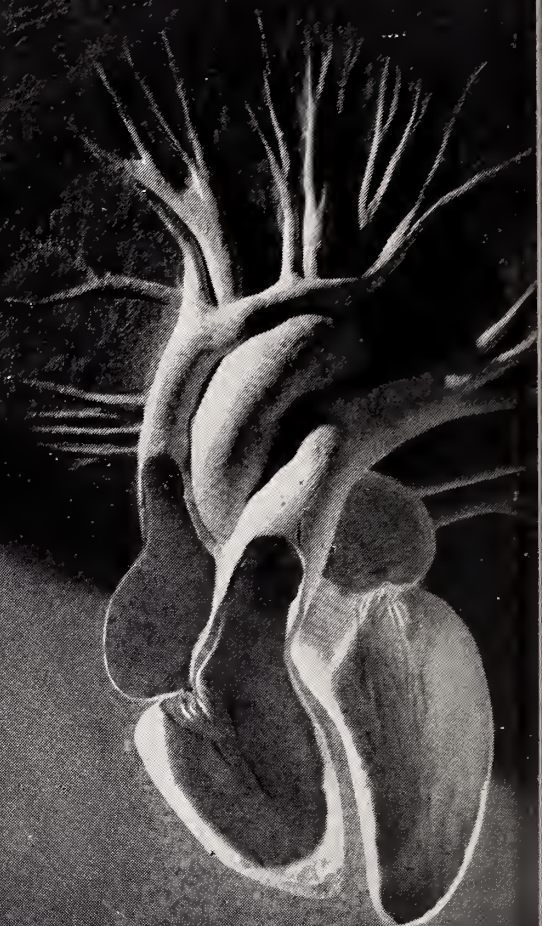




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William B. Steen, M.D.

**WE HAVE** been busy during the month of February at the time that this letter was written and now much of this will be a matter of history and only a matter of record. I cannot emphasize too much that this is a busy time for our State Society. In many respects a year of activity seems to be transacted within

the short space of a short month. Reports are to be submitted by the first of March. This necessitates many committee meetings. The tempo of all activity is greatly increased. All this must be done in addition to our ordinary, orderly daily operation of the State Office. Everything points to the Annual State Meeting in Chandler Tuesday, April 28 to Saturday, May 2, with the meetings of the House of Delegates. This is our Medical State Legislature with resolutions (our bills) to be considered and possibly enacted. New officers are to be elected and a new president will assume office.

### Legislation

I cannot close this letter without saying a few words about our legislative program, the outcome of which is uncertain at this time. The Legislature is in the second month of its session, and much hangs in the balance.

All the doctors of the State Society, the officers, the Legislative Committee, the Central Office Staff and our State Legal Counsel have played an important role in these activities. All have given a tremendous amount of energy almost working constantly in an attempt to carry the legislative program through to success and have the bills enacted.

It begins to appear that eventually your president may be forced to live in Phoenix during the month of February to successfully ride herd on all the various commitments and to help to successfully carry through our program.

We are vitally interested in the implementation of the Kerr-Mills Law, the Amendment to the Basic Science Law, the Medical Practice Act, and the Good Samaritan Bill. At this time, these bills are in the legislative mill and only time will tell the outcome. In addition, there

are many other bills of the hundreds that are introduced that affect the health of the people of the state of Arizona that need to be checked and a decision made as to our position on the particular bill in view of the test of how it affects the health of the people of Arizona.

Our Annual State Meeting will be held in Chandler, beginning Tuesday, April 28 and will continue through until Saturday, May 2. You have received information about this meeting which provides an excellent program that your Scientific Assembly Committee has worked hard to fabricate, through many meetings and much travel.

Top Doctor-Scientists will present the scientific program for our scientific uplift. Social activities with a luau on Wednesday, a shore dinner on Thursday, and the grand finale — The President's Reception and Dinner Dance — on Friday night, will all offer lighter moments of relaxation. Golf, bowling and many other non-scheduled activities will round out a real bang-up Medical get together.

### Auxiliary

Our ladies who have worked with us, helped us with our major problems and supported us throughout the year, have developed a program tailored for all the ladies of the State Society for this meeting. I am sure that the wives will have an excellent time at Chandler. It has the atmosphere and surroundings that have been incorporated into our meetings. Whatever our lady wishes to do, she will find at Chandler — change, relaxation, the pool, golf, meetings, planned activities or do nothing. Everything has been done to make this a meeting for everyone, regardless of what one wants to do. In addition, our ladies have undertaken the matter of advanced registration this year, and, I understand they are doing an excellent job. We want to make this a very successful meeting in every way.

The various committees and individuals have pooled forces. The scientific Assembly Committee, your Officers and Board of Directors, the Woman's Auxiliary, the Central Office and hotel management provide a combination of events that will give you an outstanding state meeting. They all deserve our undivided support, cooperation and attendance to make this Annual Meeting the best that we have ever had.

**See you in Chandler in April.**

WILLIAM B. STEEN, M.D. President



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# OPEN LETTER TO PERTINAX\*

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c/o British Medical Journal

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Dear Sir:

We were surprised and sorry to learn that neither your editor nor you would permit us to republish your provocative column "Without Prejudice" appearing in the *British Medical Journal* August 17, 1963. It had been called to our attention by one of our members who felt it would certainly be of interest to our readers.

*\*Doctor A. F. Morrison of Phoenix brought to our attention an editorial titled "Without Prejudice" appearing in the British Medical Journal August 17, 1963. It was signed "Pertinax" (dictionary definition: "stubborn . . ."). Our request to republish this column in Arizona Medicine was denied by the editor and "Pertinax." This letter is our reply.*

This letter to you is written not with malice, but with a feeling of disappointment and sadness that while the freedom of man was your expressed underlying concern, you have denied your medical colleagues in Arizona the freedom to learn from your mature and thoughtful column.

For us to read your description of the National Health Service as "a thing of shreds and patches" is not for us to be critical of you or your system. Instead, we try to learn from your experience and we are interested that "what the G.P. is beginning to discover is that he has been presented with the *illusion* of freedom."

As you are no doubt aware, there are those in our country who would not agree with you that "the supreme public issue today is 'Socialism or Freedom'." Many of our political spokesmen know well the truth of "Bevan's dictum that the National Health Service is at the heart of politics," but they do not acknowledge this to their constituents.

## ARIZONA MEDICINE

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

6. Reprints will be supplied to the author at printing cost.



## Editorials

In the final analysis the doctors of Arizona and the doctors of Great Britain are anxious for the best care for their patients. We are concerned about this care when we read your comments that "the free and unfettered access of the patient to the G.P. encourages thoughtless access, and in fact makes it more difficult than ever for the G.P. to examine thoroughly those in medical *need* of examination."

If any comments in our modest journal are of interest to you at any time you, naturally, have our permission to reprint such material. We hope that in the future you will not deny us the privilege of bringing some of your thoughtful comments to our readers as well.

Sincerely yours,  
Robert F. Lorenzen, M.D.  
Editor-in-Chief

## QUALIFICATION OF WORLD LEADERS

**E**VENTS of the past few days, months and particularly the past 50 years, bring into focus the tremendous significance that often must be placed on the decisions of one man. That DeGaulle feels free to disregard his allies in the cold war and make the momentous decision to recognize Red China seems incredible to some of us in the U.S. Whether this decision justifies questioning the man's sanity or not is not the point I am discussing but the far broader question of need for and methods of, establishing limiting qualifications for governors in the society of today.

Throughout the history of man in many varying circumstances the rulers of a civilization survived under the natural or supernatural laws prevailing. Usually the most long lasting survived because of the assumption of divinity, which was the custom during the 5,000 years before the seventeenth century. The natural limitations of military might provide a termination that insured that the ruler did not long outlive his usefulness, namely "He that lives by the sword shall die by the sword."

In the past 50 years, a striking change seems to have taken place: several of those charged with the guidance of the destiny of the world have been past 70 years of age and some past 80. Churchill, Hindenburg, DeGaulle (74), Adenauer, Syngman Rhee (89), Chiang Kai-shek (77) — now Khrushchev (70). If Hindenburg had been younger and vigorous, there might not have been a Hitler.

**F**URTHER, there have been periods when the decisions affecting the world have been made by men whose sanity may have been under question or some serious physical handicap might have altered sound judgment, such as Kaiser Wilhelm, Hitler, Stalin and some U.S. presidents.

Also, the immediate future seems still to be in the hands of some older individuals — the U.S. succession could go to McCormick, 73 or Hayden, 87. There is Haile Sellassie, 75, Nehru, 74. Does not India need more than sagacious judgment at the helm? Would it not be better to have one capable of action? And one who will be alive to share in the results of that action? Does not the Police State of Russia offer a greater threat of uncertainty because of Khrushchev's age which makes him more subject to arterial brain damage?

There have been rulers who persisted into their 70's and were considered good. But their greatest service was rendered at a younger age.

**I**T WOULD be a contribution to society to have some of the limiting factors agreed upon. The medical profession should be called upon to delineate some of the boundries of qualification. The social psychologists would make a contribution and the legal profession might then have a basis on which to legislate. Debate over the problems involved can have an effect on public opinion.

In the proposals which have been advanced for changes in our own laws governing presidential succession, there seems to have been very little said about medical considerations of health, mental or physical limitations or means of establishing even defects contributory to those limitations. Perhaps there is an assumption that medical consultation with outstanding medical authorities would be automatic? Is this a tenable assumption?

Granted the problems seem well nigh insoluble but someone must start thinking about them. We may hope that some light and leadership will develop in our profession.

Howell S. Randolph, M.D.  
Guest Editor



## THE ECONOMICS OF BLUE SHIELD AND THE SERVICE BENEFIT PRINCIPLE

By John J. Vance, Executive Vice President  
Colorado Medical Service, Inc.

It is my understanding that there are eleven Western States represented here at this luncheon today. Also represented here is a broad understanding of, and — I hope — patience with, the great variety of Plans which comprise our voluntary health insurance system. As you cope with the different benefits and reporting requirements of these many Plans, you have no doubt observed that our voluntary health insurance system is really no system at all! The President of the New York City Blue Shield Plan noted this in a recent published paper which put the word, system, in quotes, and described it as a “confused mixture of competing mechanisms.” Competing mechanisms usually employ contrasting philosophies, which, in this instance, we can divide into two broad categories: The Selective Rating Philosophy — and the Community Rating Philosophy.

Selective Rating seeks to enroll the good health risks and does so at prices below those which Community Rating requires. Community Rating seeks to enroll all people at one common rate, which pools the good and the bad health risks. These are opposing philosophies and can not long exist side by side. To exist, each must enjoy some degree of success and — as the Selective Rating approach succeeds — it chokes off the supply of good health risks, making it more and more difficult for the community rating approach to obtain a cross section of the community health status. The spread between the dues charged under Selective Rating and those charged under Community Rating will increase in relation to the degree of success which Selective Rating achieves in enrollment; and, if such successes continue, the time must ultimately come when the Community Rating system prices itself out of the reach of the market it was designed to serve.

Those who oppose socialized medicine should oppose plans which employ the Selective Rating system, because it leads us blindly in the direction of socialization. Selective Rating favors —

in benefits and rates — the good health risks and segregates the poor risks and subjects them to lower benefits, or higher rates. Persons so segregated will form a dissatisfied and vocal group, clamoring for government intervention — in the belief that freedom of choice in the health field is a luxury they can no longer afford.

Since the dues established through Community Rating are higher than those of Selective Rating, persons of good health can be enrolled by a community-rated plan only if that plan offers offsetting attractions. One such attraction can be the non-cancellable feature. This has appeal — even to the good risks, because it can be demonstrated that they may one day become bad health risks. However, the most important attraction available in luring the good health risk away from the ephemeral advantages of Selective Rating, to the higher price of Community Rating, is the service benefit principle. The service benefit (or paid-in-full) feature removes the unknown element in the cost of medical care and makes it possible for a higher community rate to compete successfully with a lower selective rate. This is a feature exclusively reserved for doctor-sponsored Plans, but, unfortunately, many Plans are not using this feature at all — and others not to its full advantage.

A Blue Shield Plan which uses the service benefit feature properly, offers a real attraction to its members. An example of this is found in one of the ads currently used by California Physicians' Service, which highlights this exclusive feature with the headline: FULL-PAYMENT PROTECTION FOR MEDICAL COSTS . . . TAILORED TO YOUR EMPLOYEES' INCOMES. It is unfortunate that all Blue Shield Plans do not have the use of this attractive device. Like Heinz pickles, Blue Shield Plans come in many different varieties. For our purposes, these many varieties can be reduced to three distinct types: The Indemnity Benefit Type; the Service Benefit Type, and the Third Type, which employs various graduations and



## Reprints

combinations of the two foregoing concepts.

Let's analyze briefly each of these three types of Blue Shield Plans:

1. **THE INDEMNITY TYPE.** This approach contemplates the payment of given fees, as allowances toward physicians' charges. Doctors who inaugurate a Blue Shield Plan, but insist that it adhere to the indemnity philosophy, are really not sponsoring a Plan. They have merely put in motion a Plan which is comparable to any commercial indemnity program. In the long run, this type of Blue Shield Plan will be unable to use the community rating system and compete successfully with the selective rating system of commercial health insurance programs.

The short-term success which an indemnity Blue Shield Plan points to, can be largely attributed to the public acceptance which its companion Blue Cross Plan enjoys. Of itself, such a Blue Shield Plan offers nothing that the commercial Plans can't duplicate.

2. **THE SERVICE BENEFIT TYPE.** Such a program assures the member — without regard to income and consequent ability to pay — full payment of his doctor's charges for covered services. A Plan following this route is asking too much of a one-rate, one-fee-schedule structure. The dues which support this one-fee-schedule, full-service concept, are applicable to the low income groups, which are overcharged, as well as the high income groups, which are undercharged. This approach presumes — erroneously, in my opinion — that doctors have one standard fee level. Unless such a Plan increases fees and increases rates, as inflation dictates, doctors' fees remain static, because participating physicians have agreed not to make charges above the fee schedule, regardless of the patient's income.

3. **THE COMBINATION APPROACH.** The Blue Shield Plan which combines the two foregoing concepts builds elasticity into its program and such a Plan should give greater satisfaction to doctors and members alike. This method is called the service benefits series and is a term which describes a Blue Shield Plan employing several fee schedules and appropriately related dues levels. These fee schedules should be carefully established by the participating physicians, who then agree to accept these fees as final compensation for members within given income brackets. The fee schedules for these various

income level Plans, when paid in behalf of over-income members, then become indemnity allowances toward whatever fees the physicians charge. This concept not only provides a participating physician with protection against static fees in an inflationary economy, but also offers greater satisfaction to Plan members, because of its adaptability to the medical profession's practice of charging in accordance with ability to pay.

The medical profession and — to a lesser extent — the dental and legal professions, are the only ones in our economy which vary fees in accordance with ability to pay. Blue Shield should have no occasion to take a position, either in favor of — or in opposition to — this concept. We recognize that this practice is customary and accept it as reasonable — in the knowledge that the pricing problems of a vendor of medical care can not be compared with those of a merchant. The merchant stocks his shelves with products of varying quality and price, and the customer selects an item in accordance with his need and ability to pay. The doctor has various products — in the form of different services — but he has only one quality; namely, the best service he is trained to perform. Unlike the merchant, who may withhold his product if he feels payment therefor may not be forthcoming, a doctor should render his service on the basis of need alone. When need alone determines whether a service is performed, the price of the service becomes secondary and is necessarily negotiated at varying levels, in accordance with ability to pay.

With few exceptions, a person's earned income determines his ability to pay and, to insure proper implementation of the service benefit concept, a Blue Shield Plan should offer a series of at least three service benefit Plans. These Plans should be identical in scope of benefits — but vary in subscription rates, fee schedules and income levels, as determined by a study of the economy of the area served. For example, such a service benefit series might include:

- Plan A — Recommended to families with an annual income of less than \$4,000.
- Plan B — Recommended to families with an annual income between \$4,000 and \$7,000.



- Plan C — Recommended to families with an annual income between \$7,000 and \$10,000.

Plan C would also be recommended to families with annual incomes in excess of the \$10,000 figure. Families with income in excess of the annual \$10,000 figure would simply be buying indemnity benefit protection — as would any family with annual income in excess of the level of the Plan it selected. The only families to enjoy service benefit privileges would be those with income less than that stipulated in the Plan selected. The availability through Blue Shield of a series of service benefit Plans makes it possible for a prospective member to choose a program which has been tailored to his financial position.

It is predicted that by 1971 the average family income will be \$9,200; the average in 1961 was \$7,020. In this state it is estimated that approximately 85 per cent of the families have less than \$9,000 in annual income. It follows, therefore, that in Colorado the three-level service benefit series described earlier would permit the vast majority of families, through proper plan selection, to purchase service benefit protection. Under our voluntary system, however, a family may choose a lesser plan than that which fits its income category, and such a family is electing to co-insure future medical care by purchasing indemnity protection.

### FEE STABILITY

The fee schedules and the membership rates of plans in a service benefit series should remain reasonably stable, regardless of what is happening to the price structure of other commodities and services. Let's analyze this statement: Why should established fees remain reasonably stable? Aside from minor fee discrepancies, which can occur and should be corrected, the basic fees — if they have been carefully conceived by the medical profession for families within given annual income limits, should remain unchanged as long as the related income limits remain unchanged. Surely, we are agreed that this is only fair — because the family which truly suffers in an inflationary period is the one with the problem of a fixed income. The family with a fixed income is generally one living on a retirement income. Not too many families find themselves in this position, but for those

who do, it is providential that participating physicians and Blue Shield's service benefit series make it possible for their medical costs to remain constant, if their incomes remain constant. A fundamental principle of the service benefit series is: **RATES AND FEES SHOULD REMAIN CONSTANT WHEN RELATED INCOMES REMAIN CONSTANT.** Minor fee changes are permitted to keep pace with advances in medical technology and minor rate changes are permitted to keep pace with variations in the incidence level — but — that's all!

If established fees remain constant, the question logically arises as to how a participating physician can be assured that his income will increase with the economy in an inflationary period. During an inflationary period, the dollar is losing its value. Prices are going up and the purchase of any commodity requires a greater number of dollars. Happily, labor is a "commodity" — and therefore, wages and salaries also rise during an inflationary period and families in general find themselves enjoying greater dollar income. Increased income progressively places enrolled families above the service benefit income bracket of the Blue Shield membership held. These families must either upgrade coverage to the next higher fee schedule and income level, or accept the fact that their membership has dwindled in value and they are liable for the difference between the Plan's indemnity allowance and the doctor's charge.

In an inflationary period, a doctor — like anyone else — finds that his costs are mounting, his home expenses are greater, his office expenses are greater, and he must either increase his practice, (an impractical solution, with many doctors currently devoting 60 to 80 hours a week to their practices) — or he must increase his charges. This is understandable, but the important point in this presentation is: **THE DOCTOR SHOULD MEET HIS REVENUE REQUIREMENTS BY RAISING HIS CHARGES AGAINST THE EVER-EXPANDING NUMBER OF OVER-INCOME BLUE SHIELD MEMBERS.** An inflationary spiral automatically trips the safety valve built into the service benefit series concept and this releases the doctor from fixed fees and, as such a period progresses, fewer and fewer members qualify under the income limits for coverage without additional charge.



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During all this economic upheaval, Blue Shield should not doze like a giant Rip Van Winkle, but should periodically market new Plans to keep pace with rising costs and wages. By this process, members can upgrade coverage and continue to avail themselves of service benefit protection by paying the additional amount for membership in the higher income level — higher fee schedule Plans.

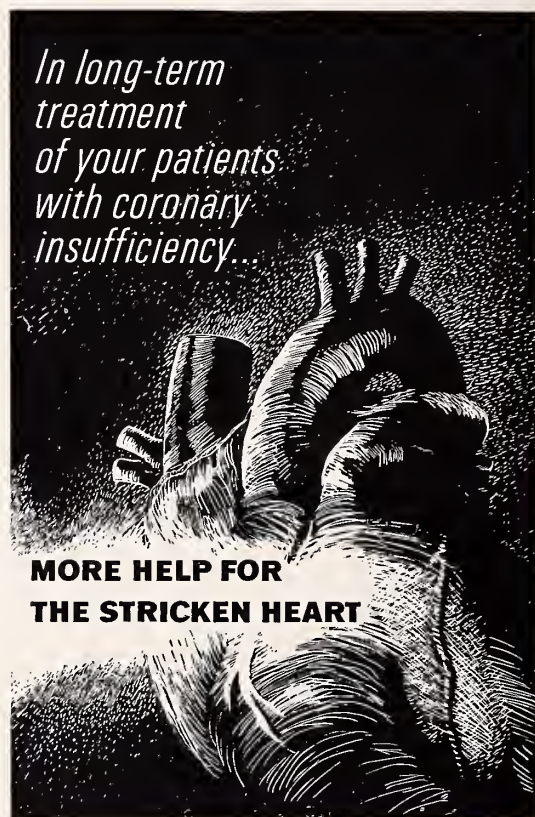
Doctors should not accept as final payment Blue Shield fees which are substandard for members who have selected coverage below their appropriate income. Some doctors do this, thinking they are "going the extra mile" in cooperating with Blue Shield, but, actually they are defeating the Plan's economic purpose and making it difficult for Blue Shield to upgrade the coverage of these members to the appropriate fee and income levels of the higher Plans in the service benefit series.

So — as Lady Godiva said as she neared the end of her famous ride — I'm coming to my clothes!" However, before I wrap this up, let me summarize:

1. To survive — the voluntary prepaid health system in America must become systematized. Plans should compete — but philosophies should not. We must discard selective rating and embrace community rating. Unless we do this, large segments of the population will be unable to afford coverage — and government intervention will be inevitable.
2. Community rating is fraught with price disadvantages and — to enroll members — it needs exclusive offsetting attractions — the most important of which is the service benefit concept.
3. Excesses are dangerous and the service benefit concept must be tempered with moderation. The service benefit series approach offers Blue Shield its greatest hope for a successful future.

---

Mr. Vance presented the foregoing paper to the Fee Schedule Advisory Committee of the Colorado State Medical Society in September, 1963.



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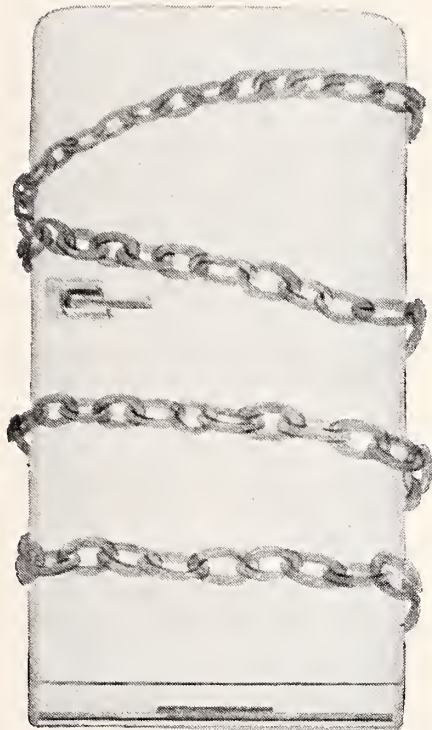
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January 28, 1964

Robert F. Lorenzen, M.D.  
 Editor, *Arizona Medicine*  
 4533 North Scottsdale Road  
 Scottsdale, Arizona

Dear Dr. Lorenzen:

I am writing this letter in the nature of an inquiry with regards to the abbreviation used for our association. For years the Arizona Medical Association was abbreviated AMA. Within recent years I note in the journal that the abbreviation is ARMA. I would like your opinion as to whether this abbreviation is acceptable from the standpoint of correct use of the English language. Secondly, I would appreciate it if you could tell me what official action was taken by the Arizona Medical Association, whereby the old designation of AMA was changed to ARMA.

I realize perfectly well there were some individuals of the opinion that the use of ARMA would prevent confusion between our association and the American Medical Association. As true as this may be, I question very seriously whether this is reason enough to justify such a change. Alabama, Alaska, and Arkansas do not seem to have thought such confusion was of really a serious importance. As a matter of curiosity I have tried to apply similar reasoning to the other forty-nine states in a useage similar to the ARMA of the Arizona Medical Association and I find the following:

MAMA and MIMA would come up three and four times respectively, as well as one OHMA. Two of the other states would come up in a COMA. This could be carried on ad infinitum, adnauseam, with RHISMA being a final example of Rhode Island Medical Association as the ultimate in exemplification of this absurdity.

It is my understanding that abbreviation of an organization usually means that the capitalized letter in the abbreviation stands for a complete word. In this particular locality there is an organization known as ARMU, with the meaning of these letters as Association of Rocky Mountain Universities and if I were to visualize any confusion regarding designation this would be my first concern, rather than the confusion between the Arizona Medical Association and the American Medical Association.

Your response to this inquiry will be greatly appreciated.

Very truly yours,  
 D. W. Melick, M.D.

February 10, 1964

Robert F. Lorenzen, M.D.  
 Editor, *Arizona Medicine*  
 550 W. Thomas Road  
 Phoenix, Arizona

Dear Bob:

The abbreviation "ArMA" was first used by Dr. Lindsay Beaton in his Presidential Address. The recommendation was made to the House of Delegates at that time that it be used as a means to prevent confusion with AMA. Since that time it has been rather widely used by the Board of Directors and the Central Office and of course the Journal as a means to prevent confusion with AMA. To the best of my knowledge there has been no official action. However, in spite of Dr. Melick's deductions I believe it is a clarification and felt it desirable to use it.

With kind regards,  
 Sincerely yours,  
 Darwin W. Neubauer, M.D.

\* \* \*

February 26, 1964

Dermont W. Melick, M.D.  
 909 East Brill Street  
 Phoenix, Arizona

Dear Doctor Melick:

Your most interesting inquiry is appreciated. It proves that people read *Arizona Medicine*.

A study is underway to determine the suitability and desirability of continuing to use our abbreviation ArMA for Arizona Medical Association. A letter, in this regard, from Doctor Darwin Neubauer is printed above.

In a future issue a more definitive reply will be forthcoming. If other readers have opinions about this matter we would be delighted to hear from them.

Thank you again for your continued interest in *Arizona Medicine*.

Sincerely yours,  
 Robert F. Lorenzen, M.D.



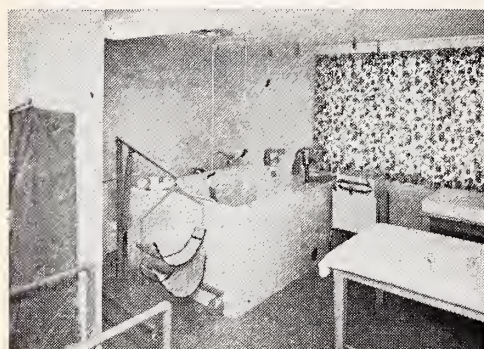
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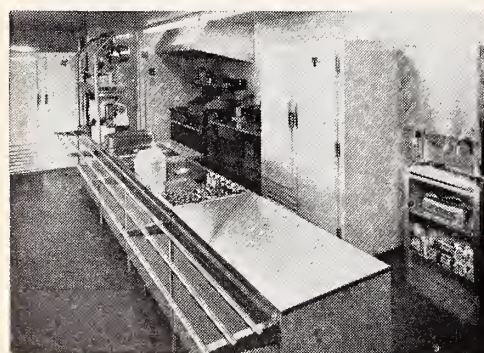
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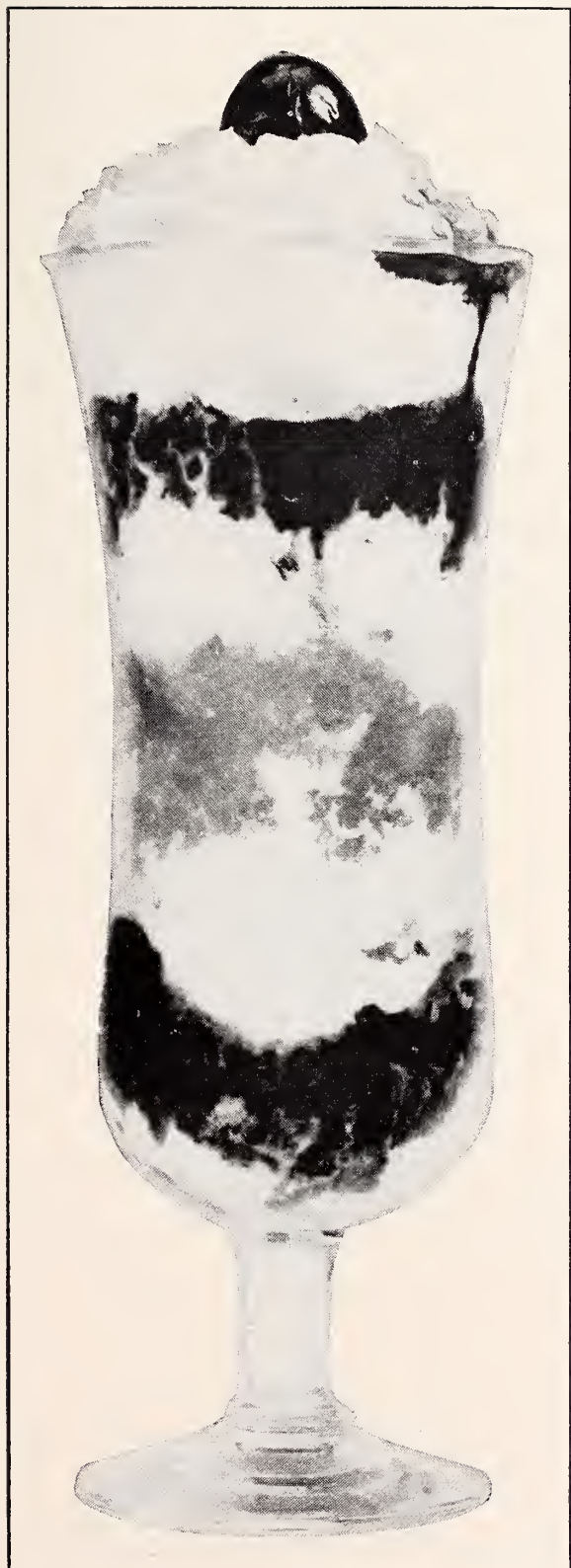
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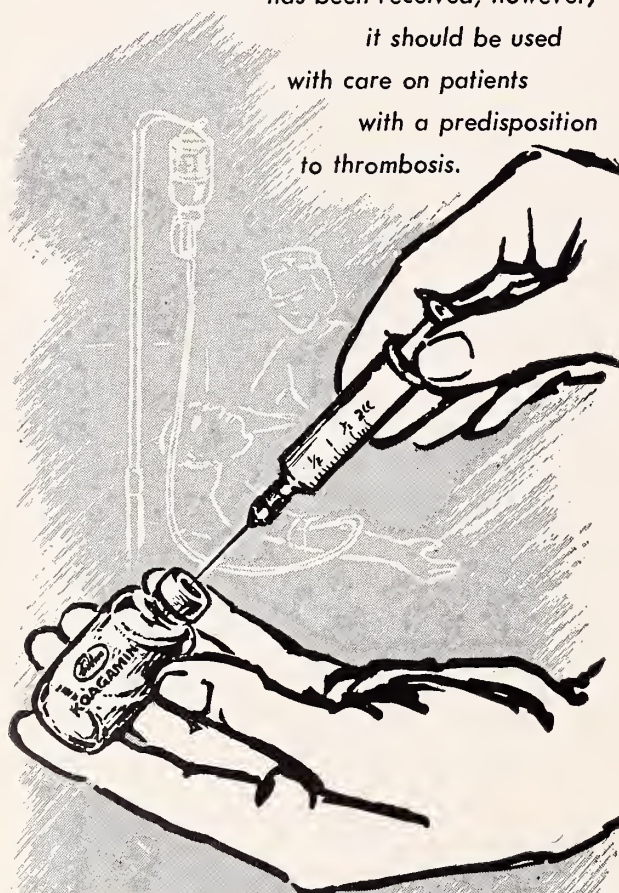


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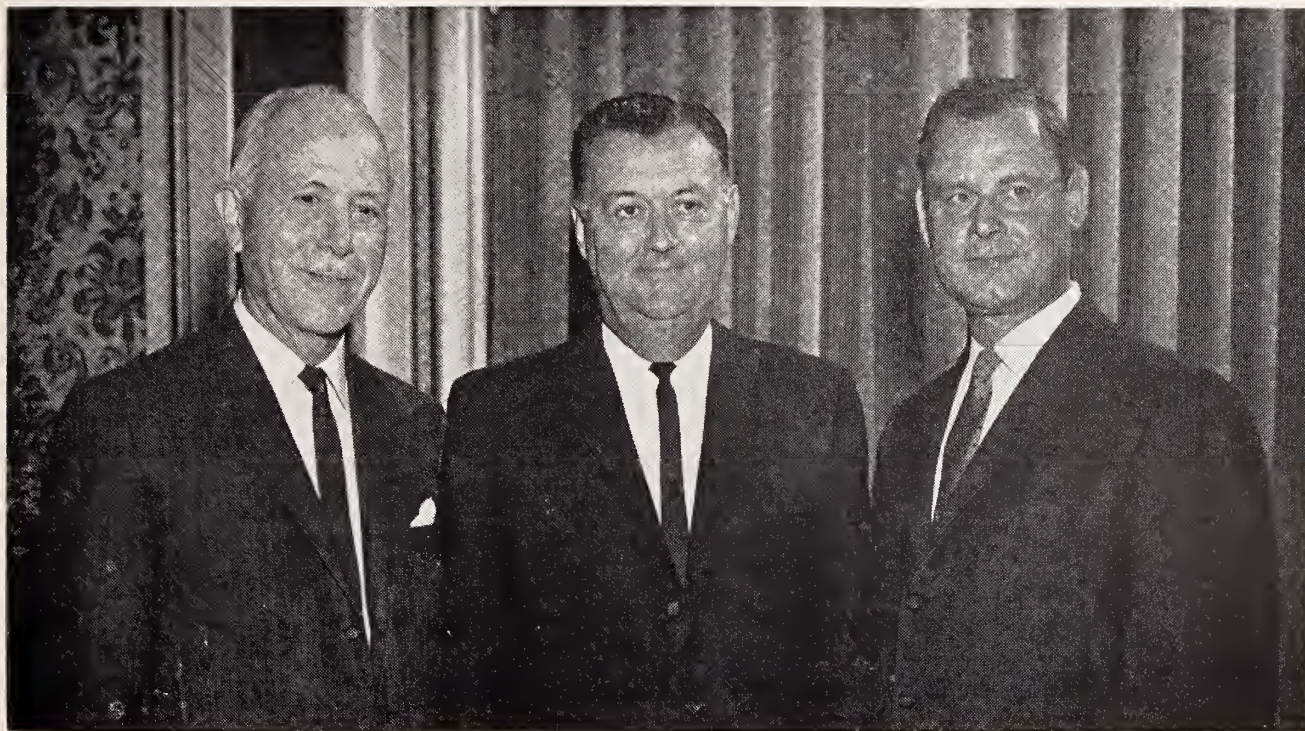
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Shown above (l. to r.) are Dr. Willard Wilson, secretary, University of Hawaii, new Western Interstate Commission for Higher Education vice chairman; Dermont W. Melick, M.D., Phoenix, WICHE chairman; and Dr. Robert H. Kroepsch, WICHE executive director.

### GUEST LECTURER

On Friday, April 17th at 4 p.m., John I. Brewer, M.D., Professor of Obstetrics and Gynecology at Northwestern University Medical School, will speak at Good Samaritan Auditorium on "Chemotherapy of Trophoblastic Tumors."

---

## Board of Medical Examiners

The Board of Medical Examiners of the State of Arizona, at a regular meeting held Saturday, October 19, 1963, issued certificates to practice medicine and surgery in this State, to the following doctors of medicine:

ABRAHAM, Arnold Osman (GP), 327 W. Main Street, Hudson, Michigan; Alexander, John Thomas (PL), 6615 Travis St., Houston 25, Texas.

BACKUS, Philip Stevenson (CHP), Dept. Child Psychiatry, Fitzgerald Mercy Hospital, Darby 1, Pennsylvania; Bartness, John (R), 408 Fountain St., Albert Lea, Minnesota; Belt, Margaret Elizabeth (Pd-ADM), Tucson Public Schools, 1010 E. 10th St., Tucson, Arizona;

Bennett, Warren Alfred (Path), 1033 E. McDowell Road, Phoenix, Arizona; Berry, Geoffrey (Anes), Vanderbilt University School of Medicine, Nashville 5, Tennessee; Bessen, Herbert (GP), 5830 Alexander St., Tucson 8, Arizona; Brooks, Jr., Harrison Morton (GP-Anes), 358 N. Seltzer St., Crestline, Ohio; Brooks, Robert Wright (OBG), 3701 Jay St., No. 205, Sacramento 16, California; Brownstein, Stanley (GP-I), 6640 N. Western Ave., Chicago 45, Illinois; Burdon, Stephen Banta (U), 517 Jefferson Building, Peoria, Illinois; Buster, Chauncey Dickey (S), 2850 Sixth Avenue, San Diego 3, California.

CARROLL, Paul Trowbridge (S), 700 Bryden Road, Columbus, Ohio 43215; Chalaire, Frank



## Topics of Current Medical Interest

Manuel (GP), 3232 N. Galvez Street, New Orleans 17, Louisiana; Chapman, Telford King (OBG), 2340 W. Coolidge Avenue, Phoenix, Arizona; Choice, Robert William (GP), 7115 North 56th Avenue, Glendale, Arizona; Cilella, Carmine Alfred (Pd), 8118 N. Milwaukee Avenue, Niles 48, Illinois.

DAVIS, Loyal Edward (NS), 700 N. Michigan Avenue, Chicago 11, Illinois; Denny, Melvin Harvey (Anes), 1719 N. Madison, Anderson, Indiana 46012; Diserens, Robert Van Zandt (I-Ge), Martin Army Hospital, Fort Benning, Georgia; Dunn, Jack (S), Centerville Clinic, Fredericktown R.D. No. 1, Pennsylvania; Durfee, Kent Esle (CP), Menninger Foundation, Topeka, Kansas.

FINCH, Stuart McIntyre (P), Children's Psychiatric Hospital, Ann Arbor, Michigan; French, Lyle Albert (NS), University Hospital, Minneapolis 14, Minnesota.

GIBSON, Francis Duncan (I), Kennedy V. A. Hospital, Memphis, Tennessee 38115; Goldberg, Phillip (GP), 99-14-211th St., Queens Village 29, New York; Gorman, Warren Frederic (NP), 5602 Nauni Valley Drive, Scottsdale, Arizona.

HELLER, Theodore Melvin (Pd), 230 Avenida de la Vista, Tucson, Arizona; Holleman, William Wallace (GP), 626 — 6th St., Rapid City, South Dakota.

JONES, Marshall Watson (P), 1930 East 6th St., Tucson, Arizona.

KAHN, Arnold (R), 461 West Catalina Drive, Phoenix, Arizona; Kennett, Donald Michael (Adm), Chevrolet Motor Division GMC, G3428 Van Slyke Rd., Flint 1, Michigan; Knutson, Donald LeRoy (R), U.S.V.A. Hospital, Tucson, Arizona.

LA BELLE, Jr., James William (Pd), 3510 USAF Hospital, Randolph AFB, Texas; Lang, Frederick Lou (ANES), U.S. Medical Center, Springfield, Missouri; Leins, Peter Alfons (I), St. Mary's Hospital, Tucson, Arizona; Lusby, II, Luther Cecil (GP), 323 Clayton St., Brush, Colorado.

McKINNON, James Andrew (GP), 225 West Hatcher Rd., Phoenix, Arizona; McLaughlin, Robert James (Pd), 129 West Maryland Ave., Phoenix 13, Arizona; Megus, Eugenia (OPH), 934 E. Marlette, Apt. 50, Phoenix 14, Arizona; Moore, Jr., John Hoy (Pd), 221 East Manhattan Drive, Tempe, Arizona; Morgan, Richard Lyle (Or), 7927 W. Lorraine Place, Milwaukee 10, Wisconsin; Mrazek, Jr., Charles (U), 6846 W. Cermak Road, Berwyn, Illinois.

NASH, George William (NS), 601 N. Wilmot Rd., Tucson, Arizona; Nickel, Frederick Allen (Anes), 1022 Professional Building, Phoenix, Arizona.

OCAMPO, Jose (Iniguez) (GP-I), Pima County General Hospital, Tucson, Arizona.

PENNINGTON, Richard Davis (U), 1313 N. Second Street, Phoenix, Arizona.

ROBBINS, Paul Cyril (I), 1420 N. Craycroft, Tucson, Arizona; Rose, Raymond Gillies (I), 6975 N. Oracle Road, Tucson, Arizona.

SHALAUTA, Ihor Harry (OBG), Maricopa County Hospital, Phoenix, Arizona; Shill, Talimage Webb (GP), 2039 Mill Avenue, Tempe, Arizona; Slott, Irving E. (I), 17 North State St., Chicago 2, Illinois; Starkman, Nathan M. (R), 3344 W. Peterson Ave., Chicago 45, Illinois; Strickland, Jr., Charles Edward (Path), 926 E. McDowell Rd., Phoenix, Arizona.

TELOH, Henry Andrew (Path), Ingalls Memorial Hospital, Harvey, Illinois; Tevis, Duane Kinne (P), 8500 Leo, El Paso, Texas; Tiedeman, John Peter (GP), 2417 Pierce, Sioux City 4, Iowa.

VERSIK, Thomas Charles (GP), 1611 USAF Dispensary, McGuire AFB, New Jersey.

WHITE, Philip Taylor (N), Barrow Neurological Institute, Phoenix, Arizona; Wikle, Walter Thomas (Path), 1500 South Mill Ave., Tempe, Arizona; Wilcox, Roger Eugene (GS & TS), 909 E. Brill St., Phoenix, Arizona 85006; Wolfe, Austin Robarts (GP), Sage Memorial Hospital, Ganado, Arizona 86505; Wolfe, Jr., Charles Kline (I), 636 Church St., Evanston, Illinois.

YOCKEY, Robert Lee (OPH), V.A. Hospital, University Drive, Pittsburgh 40, Pennsylvania.



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Your patients may obtain identification bracelets or lockets by writing Medic-Alert Foundation International, 1030 Sierra Drive, Turlock, California.



### TB SANATORIUM DEDICATED

**T**HE NEW Arizona State Tuberculosis Sanatorium will be dedicated at 10:30 a.m. on March 13, 1964. Governor Paul Fannin will cut the ribbon and an "open house" for the public will follow.

The hospital opening is the fruition of a dream that was long in becoming a reality. The new 173 bed facility will replace the present 81 bed sanatorium which was completed in 1934 under the Federal Emergency Relief Administration.

In 1960 the Arizona State Legislature, by Senate Bill No. 109, appropriated \$50,000 for planning and construction of the new hospital.

In 1961 the Arizona State Legislature, by House Bill No. 39, appropriated \$2,182,000 for the construction of a new 173 bed hospital. An additional \$700,000 was received under a Federal Hill-Burton grant. Construction was begun in January, 1962.

In 1962 the Arizona State Legislature, by House Bill No. 68, appropriated \$450,000 for equipping the new hospital.

Building contract No. 2, dated November 15, 1962 in the amount of \$2,256,300 was awarded to Kitchell-Phillips Construction Co.

An open house is also scheduled for Sunday, March 15th, from 2 to 5 p.m. when the public is invited for a preview showing of the new hospital before the patients are received.

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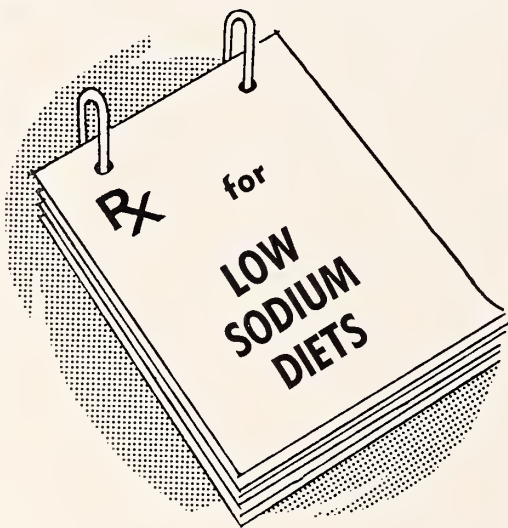
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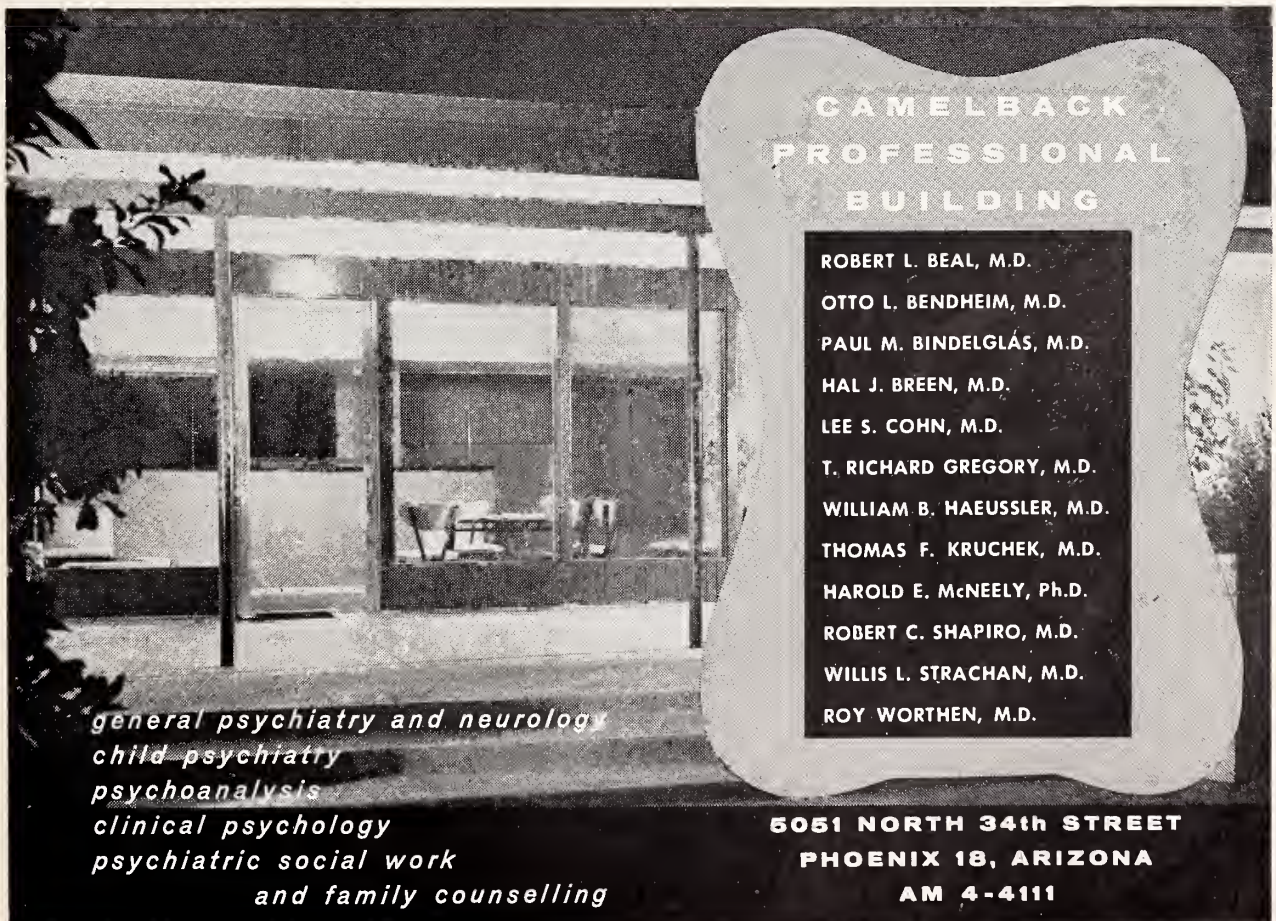
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# Arizona Medicine

JOURNAL OF ARIZONA MEDICAL ASSOCIATION  
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April, 1964  
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\*Roseman, E.: *Neurology* 11:912, 1961.

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April, 1964

Vol. 21, No. 4

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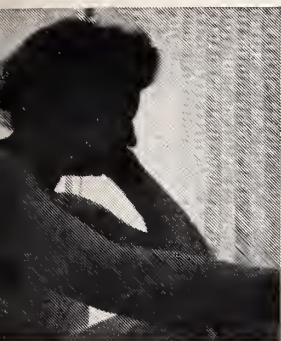
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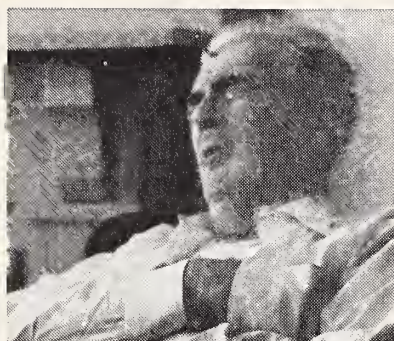




The insomniac



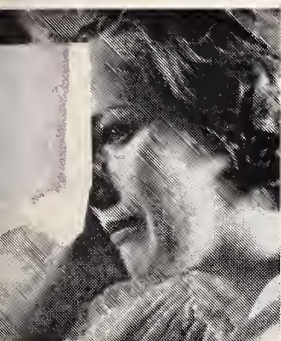
The tense, nervous patient



The heart-disease patient



The surgical patient



girl with dermatosis



Tension headache



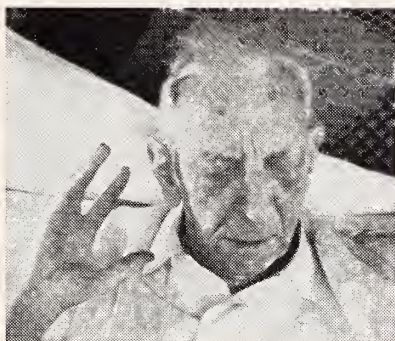
The woman in menopause



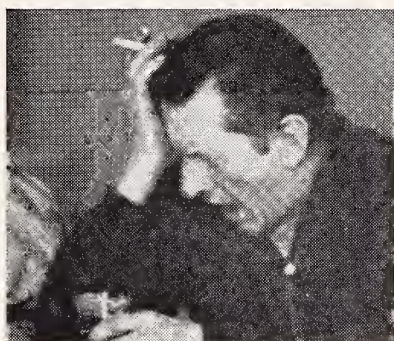
Anxious depression



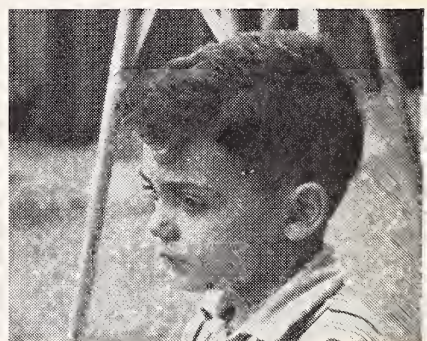
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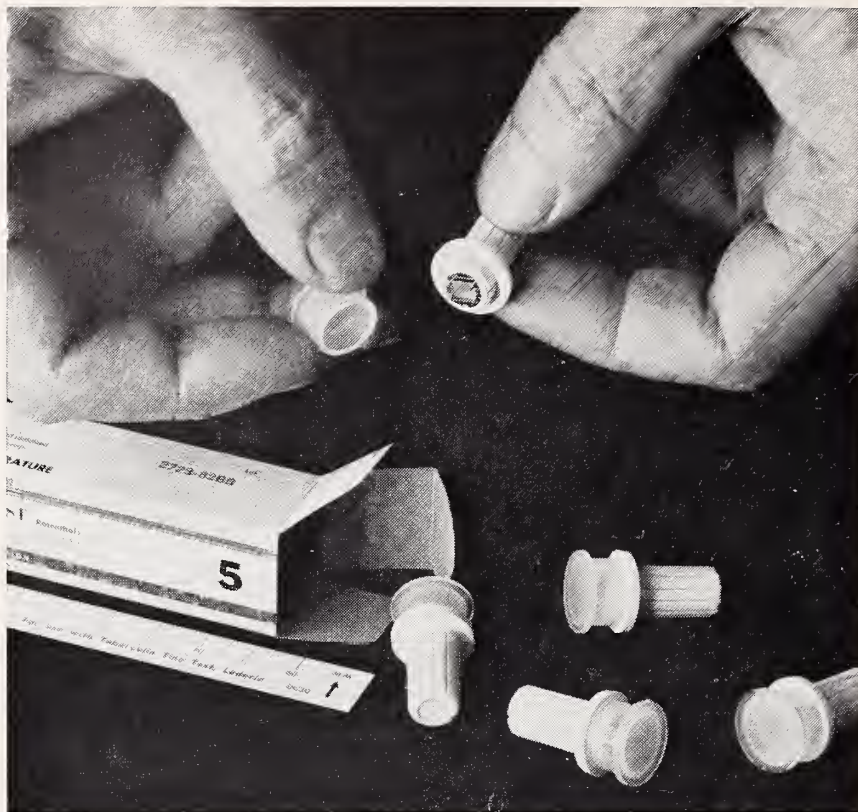
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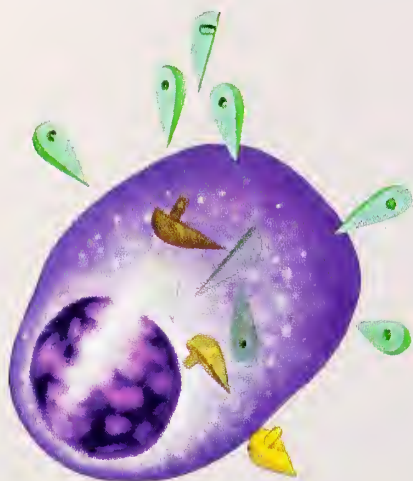
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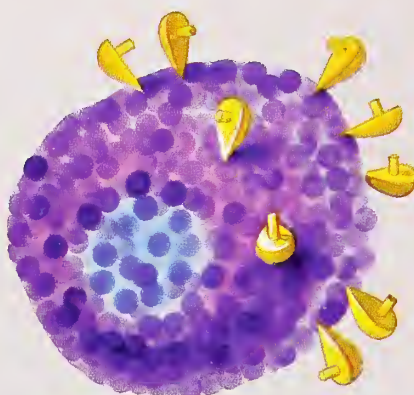


# In theory, allergy works like this...

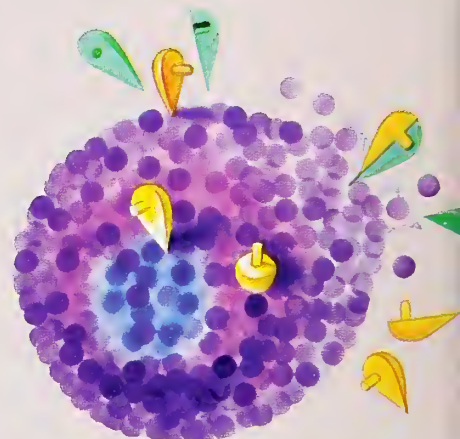
It is generally accepted that a complex antigen-antibody reaction underlies allergy. The reaction may be visualized in this simplified graphic form:



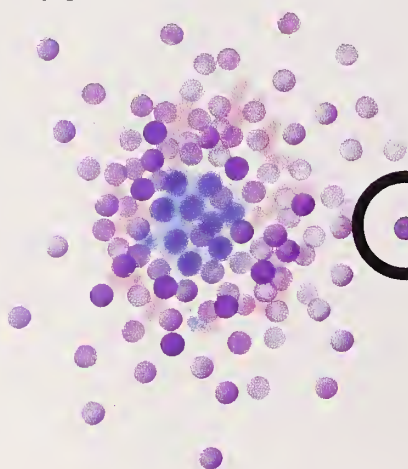
At first exposure to antigens (green) specific antibodies (yellow) are formed chiefly by plasma cells.



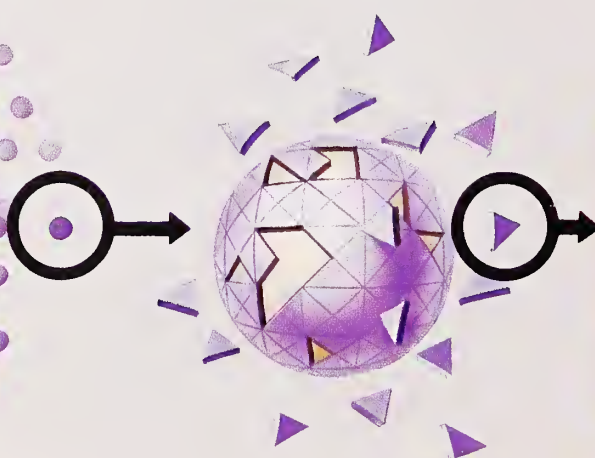
Circulating antibodies in the blood stream may become attached to mast cells in the tissues.



If the same *antigen* again enters the body and reacts with *antibodies* attached to cell walls, disturbances occur. The cell disrupts...



...depositing granules containing bound histamine or histamine-like substance in intercellular spaces.



Calcium ions and enzymes act on the granules breaking the binding and releasing histamine or histamine-like substance.



Theoretically, this liberated histamine (purple) acts at *receptor sites* in target tissues resulting in allergic manifestations.



Antihistamine (orange) is believed to compete with histamine at the receptor sites in target tissues — thus counteracting allergic effects.



# In allergy, this antihistamine works with no more sedation than placebo\*

The therapeutic response to Dimetane (brompheniramine maleate) is eloquent proof that a *potent* antihistamine does not have to be a sedative, too. You may expect unsurpassed relief of symptoms promptly in most types of allergy because Dimetane (brompheniramine maleate) *works* with a very low incidence of side effects. Indeed, as shown in a double-blind crossover study, with no greater incidence of sedation than placebo.\*

\*Schiller, I. W. and Lowell, F. C.: New England J. Med. 261:478, 1959.

CONTINUOUS ACTION UP TO 10-12 HOURS

## Dimetane® Extentabs® (brompheniramine maleate, 8mg. & 12mg.)

**BRIEF SUMMARY: Indications:** Dimetane (brompheniramine maleate) is a potent antihistamine effective in a wide variety of allergic states.

**Side Effects:** Hypersensitivity reactions, including skin rashes, urticaria, hypotension, and thrombocytopenia, have been reported rarely. Occasional transitory drowsiness, lassitude, nausea, or giddiness may be encountered. Dryness of the mouth and mydriasis have been reported infrequently.

**Precautions:** Until response is determined, patient should be cautioned against engaging in mechanical operations requiring alertness.

**Contraindications:** Hypersensitivity to antihistamines. Not recommended for use during pregnancy.

ALSO AVAILABLE: New lower strength Dimetane 8 mg. Extentabs (brompheniramine maleate 8 mg.); conventional tablets (4 mg.); Elixir (2 mg./5 cc.); Injectable (10 mg./cc. ampuls, and 100 mg./cc. in 2 cc. vials).

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA



Visit our Booth No. 28 at the Annual Meeting





## HOW TO BE SURE your young patients get the aspirin dosage you want them to have

The answer is Orange Flavored Bayer Aspirin for Children. The dosage is  $1\frac{1}{4}$  grains per tablet. Mothers place such confidence in the Bayer name. And the new orange flavor is so fresh and smooth that children take it readily. (The grip-tight cap on the bottle helps keep them from taking it on their own.)

For professional samples, just write The Bayer Company, Dept. 112, 1450 Broadway, New York 18, New York.





### BOARD OF DIRECTORS

Meeting of the Board of Directors of The Arizona Medical Association, Inc., held Sunday, February 9, 1964, in the French Quarter of the Safari Hotel, Scottsdale, Arizona, convened at 10:05 a.m., James E. O'Hare, M.D., Vice-President and Chairman, presiding.

### ROLL CALL

PRESENT: Drs. Baldwin, Earl R.

Brazie, Walter

Brewer, W. Albert, Pres.-Elect

Derickson, Philip G.

Dudley, Jr., Arthur V., Treas.

Dysterheft, Arnold H.

Finke, Howard W.

Flynn, Richard O.

Henderson, Charles E., Secy.

Jarrett, Paul B.

Jensen, Thomas W.

Lorenzen, Robert F.

McNally, Joseph P.

Melick, Dermont W.

O'Hare, James E., Vice-Pres. and  
Chairman

Price, Robert A.

Rhu, Hermann S.

Smith, Noel G.

Steen, William B., Pres.

Taylor, Ashton B.

Yount, Jr., Clarence E.

Staff: Boykin, Paul R., Assistant Executive Secretary

Carpenter, Robert, Executive Secretary

Jacobson, Edward, Counsel

GUEST: Dr. Foster, R. Lee

EXCUSED: Drs. Beaton, Lindsay E.

Eisenbeiss, John A.

### MINUTES

Minutes of the Board of Directors meeting held November 24, 1963, under the subject heading Benevolent and Loan Fund Committee, second paragraph comprising motion line seven (7) amended, deleting the word "printed" thereby resulting in the concluding directive or portion of the motion to read "and that any standard, acceptable from a resolution required by the Valley National Bank be considered hereby passed"; and approved, as amended.

### ATOMIC ENERGY COMMISSION

Doctor R. Lee Foster (Phoenix), on invitation, attended this meeting for discussion as regards Senate Bill 119, "An Act relating to atomic energy; creating the Arizona Atomic Energy Commission; providing the means for the State to take over certain responsibilities now vested in the United States Atomic Energy Commission; establishing the basis for encouraging the development of new private industries; prescribing the duties and authority of the Commission; providing for the licensing and regulation of sources of ionizing radiation; prescribing penalties; amending\*\*\*."

The following suggested amendments are recommended:

Section 30-651 B. 3. "To coordinate these activities and studies with other groups and agencies, public and private, who are active in the fields of ionizing

radiation, radiation sources and measurement, and atomic energy, AND COOPERATE WITH EACH IN ITS RESPECTIVE FIELD."

Section 30-672 D. "A person licensed in this state to practice as a dentist, chiroprapist or veterinarian or licensed in this state to practice medicine, surgery, osteopathy, chiropractic, naturopathy or any other system or method of healing shall not be required by the Commission to obtain any (other) license for the use of an x-ray machine. HOWEVER, NEITHER THIS SECTION NOR ANY OTHER PORTION OF THIS ACT SHALL BE CONSTRUED TO AUTHORIZE THE USE OF X-RAY BY ANY OF THE AFOREMENTIONED PRACTITIONERS OF THE HEALING ARTS UNLESS THE SAME IS OTHERWISE AUTHORIZED UNDER THEIR RESPECTIVE LICENSING ACTS."

Approved.

### EXECUTIVE COMMITTEE REPORT

#### Benevolent and Loan Fund Committee

Following report by Counsel, the Board determined to accept the medical student loan program presented by the Valley National Bank of Arizona (Phoenix), initiated by this Association, unanimously adopting the following resolution and authorizing the execution of pertinent agreements to activate the program:

"RESOLVED that this corporation be, and is hereby empowered to enter into a loan plan arrangement with The Valley National Bank of Arizona, a national banking association, whereby said Bank may make student loans to well-qualified medical students, which loans shall be guaranteed by this corporation;

"RESOLVED FURTHER that William B. Steen, M.D., as President, and Charles E. Henderson, M.D., as Secretary, be, and they are hereby authorized and empowered to execute and deliver on behalf of this corporation to Bank, any and all documents necessary to document and evidence such arrangement, including, but not limited to a loan guarantee plan agreement and deposit agreement and they are further authorized and empowered to do any and all acts necessary to effectuate said arrangement;

"RESOLVED FURTHER that The President and The Secretary, be, and they are hereby authorized and empowered to do any and all acts and execute and deliver any and all documents on behalf of the corporation, including, but not limited to student loan agreements, interim notes, pay-out notes and any other documents necessary to comply with the corporation's requirements under the terms of said financing arrangement as set forth in the loan guarantee plan agreement to be executed by this corporation and The Valley National Bank of Arizona;

"RESOLVED FURTHER that a certified copy of the Resolution be sent to the said The Valley National Bank of Arizona and that it shall remain in full force and effect until written notice of its repeal shall have been received by The Valley National Bank of Arizona."

Doctor Dudley, Jr., suggested that, at the appropriate time, the Association might give thought to the "establishment of scholarships." It is recognized that during the first six months of training, a medical student does not have funds made available to him through either



# Arizona Medical Association Reports

the AMA - ERF or Federal programs; therefore, this reflects an unmet need.

## Board of Directors

Richard O. Flynn, M.D., (Tempe) appointed a Central District Director for the term expiring in 1964, filling the vacancy created by the resignation of Clyde J. Barker, Jr., M.D., (Phoenix).

## ARMPAC

The resignations of Walter E. Ahrens, M.D., (Tucson), and John W. Moon, M.D., (Mesa), Chairman, as members of the Board of Directors of ARMPAC were accepted.

Appointed the following membership to the ARMPAC Board of Directors for the term of one year, or until such time as their successors are appointed and have accepted office: William B. Steen, M.D. (Tucson), Chairman; Walter D. Anderson, M.D. (Yuma); Walter Brazie, M.D. (Kingman); William G. Payne, M.D. (Tempe); John R. Schwartzmann, M.D. (Tucson); John F. Westfall, M.D. (Phoenix); Henry G. Williams, M.D. (Phoenix); Mrs. Albert O. Daniels (Prescott); Mrs. Richard L. Dexter (Tucson); and Mrs. Richard P. Timmons (Scottsdale).

Appropriated \$1500.00 as a donation to the educational fund of ARMPAC.

## Financial Report

Doctor Dudley, Jr., reported total revenues received in 1963 amounted to \$169,114.65, representing 98% of the budgeted amount of \$172,837.00. Total expenditures for this same period amount to \$135,815.79, representing 86% of the budgeted appropriation of \$157,109.39, resulting in an increase in the reserve account of \$33,298.86.

Journal (ARIZONA MEDICINE) operations reviewed reflect a deficit of \$6,969.27 (including the allocation of \$5,920.00, representing membership subscriptions appropriated out of dues received).

It was further stated that it is anticipated it will take an additional four or five years to redevelop "surplus" in an amount within reasonable limits to assure a sound financial basis of operation.

For the first month, January 1964, receipts totaled \$51,414.21, representing 29% of the budgeted amount of \$174,562.00. For this same period, expenditures totaled \$7,917.14, representing 5% of the budgeted appropriation of \$160,698.88.

The Treasurer was authorized to increase bank savings accounts to a total of \$20,000.00 per account, as he may dictate it. Thus, benefiting to the full earned interest, even though the guarantee is limited to \$10,000.00.

Authorized transfer of \$4580.99 from the current loan fund program to the new loan fund program; and authorized \$3775.36 to be moved from the general fund interest from savings account to the new loan fund program; totalling \$8356.35. There remains \$5916.60 in the Benevolent Fund savings account.

Doctor Dudley, Jr., pointed out that, if, as, and when a medical student scholarship fund is provided, it is very possible that the interest earned from savings accounts may well provide the necessary funds required for scholarships. It was directed that an appropriate

resolution be prepared and presented to the House of Delegates of the Association during the forthcoming annual meeting, which would establish a scholarship program to include students from Arizona State College, at Flagstaff; the University of Arizona, at Tucson; and Arizona State University, at Tempe.

## 1965 Budget

A suggested budget for the year 1965 was presented and recommended by the Treasurer, anticipated income totalling \$173,200.00, and anticipated expenditures totalling \$162,050.00. Approved.

## Legal Services

Authorized additional payment of \$832.00 to the legal firm of Snell and Wilmer, Counsellors representing this Association, accounting for the excess of legal services rendered totalling \$6832.00 for the year 1963 over retainership paid on a monthly basis totalling \$6000.00.

## Membership Classification Changes

Associate membership granted Robert S. Keller, M.D., (Graham County), Dues Exempt, account Residency Training, effective January 1, 1964.

Associate membership granted Naugle K. Thomas, M.D., (Pima County), Dues Exempt, account disability (illness), effective January 1, 1964.

## Central Office Advisory Committee

Staff employees express appreciation and thanks for the 1963 Christmas bonus granted.

## Industrial Relations Committee

Industrial Commission of Arizona favorably inclined to adopt a third revision of the medical and surgical fee schedule, based upon the relative value study of California, with the use of the conversion factor of 4.50, with no exceptions other than the addition of procedure codes to cover the present types of group consultations and the inclusion of the necessary rules to conform to the statute and the existing rules of procedure. It is estimated this will represent a probable 10% minimum increase in overall Medical Department costs approximating a minimum of \$300,000.00 per year. If adopted, the Commission would not anticipate any additional requests for alterations of this schedule for the period of at least three years; and, then, only on the basis of possible subsequent revisions of the study and the applicable conversion factor. It was determined to accept this proposal.

Confirmed presidential appointments of Doctors Samuel J. Grauman (Tucson), J. Daniel Bullington (Phoenix), and Edward B. Waldmann (Phoenix), to constitute a medical Board of Consultants in the field of cardiology to serve the Industrial Commission as required. These individuals, it is anticipated, will be compensated on the same basis as the Board of Consultants previously appointed and serving in the field of psychiatry.

## Legislative Committee

The Arizona Board of Pharmacy suggests it be alerted in instances where an available pharmacist is unable or unwilling to render essential services and drugs specified in the filling of prescriptions.

Active support recommended in the enactment of legislation during the current Arizona State Legislature



## Arizona Medical Association Reports

session in the instances of the revision of the Medicine and Surgery Act; amendments to the Basic Science Certificates Act; and implementation of the Kerr-Mills law.

Inactive support is recommended relating to measures dealing with a proposed statutory salary increase for the Commissioner of the Arizona State Department of Health; supplemental appropriation for current operations at the Arizona Tuberculosis Sanatorium; an adequate operational budget for the Health Department covering the fiscal year 1964-1965; a measure referred to as a "good samaritan" act relieving liability of the physician at the scene of an emergency; and proposed creation of an Arizona Atomic Energy Commission.

It was determined to defer further consideration and action at this time dealing with vivisection.

Importance is attached to the enactment of Kerr-Mills implementation legislation. Counsel is instructed to take whatever action appears indicated to realize favorable consideration of this important measure.

### Medical Economics Committee

Authorized execution of agreements dealing with Medicare Contract No. DA-49-192-MD-64, covering the period March 1, 1962, to February 28, 1963, three-party release and assignment forms, together with supplemental agreement covering allowable cost and payment for period, establishing \$1.74 as the negotiated claim rate and cumulative claim and reconciliation statement of payments.

Authorized execution of agreements relating to Medicare Contract No. DA-49-192-MD-116, involving Manual and Schedule of allowances to include "cinefluogram of bladder with pressure determination"; and negotiated claim rate substituting from \$2.50 to \$1.50, effective December 1, 1963.

Modification of Medicare allowances proposed by ODMC in the instance of renewal of Medicare Contract No. DA-49-192-MD-(?) for the period March 1, 1964, to February 28, 1965, to the general level of allowances now paid to subscribers under the full service Arizona Blue Shield Plan "45." It was determined that the proposal be rejected; however, that it be referred to the Medical Economics Committee for further consideration and negotiation with ODMC. It is anticipated the current Medicare Contract will be extended for a period to realize further negotiations.

Reported filing with the Commissioner of Internal Revenue this Association's disapproval of proposed regulations, Sections 301.7701-1 and 301.7702-2, which would result in the denial of corporate status, for Federal income tax purposes, to professional corporations established in many of the states. It was determined that Robert A. Price, M.D. (Phoenix), at Association expense, be authorized to attend the public hearings scheduled by IRS in Washington, D.C., allowing those especially interested to be heard and orally express their views relating to the proposed regulations.

### Professional Committee

Recommended provision for an annual meeting of the Disaster Medical Care Subcommittee to coincide with the Association's annual meeting; that strong effort be made to establish a position, staffed by a doctor or

a physician, in the State Public Health Department entirely devoted to disaster medicine; and that a portion of the Association annual meeting program be devoted to disaster medical care. Received.

Suggested appropriate news releases prepared and released by the Public Relations Committee of ArMA, in cooperation with the State Health Department, informing the public of various campaigns in the field of health. Received.

Recommended acceptance as minimal standards for the health care of the foster home child prepared and submitted by the State Department of Public Welfare. Received.

Referred back to the Professional Committee for review and definite recommendation, the "Cooperative Plan for Medical Health" program sponsored by Smith, Kline, and French.

Approved resolution of the Arizona Psychiatric Society, relating to the Arizona State Hospital, adopted October 20, 1963.

Recommended adequate medical guidance in the establishment of any Department of Rehabilitation at the University of Arizona, and that the Pima County Medical Society interest itself in this matter and report to the Board.

Authorized appointment of an ad hoc committee to assist in the establishment of any Rehabilitation Department at the University of Arizona, consisting of: Doctors Roger W. Cole (Tucson); Orin J. Farness, Chairman, (Tucson); and Harold W. Kohl, Jr. (Tucson). Authorized.

Physicians and/or County Medical Societies seeking information in the field of rehabilitation suggested referred to Ray Fife, M.D., Chairman of the Subcommittee on Rehabilitation, who has accumulated a substantial amount of material and other information on the subject. Received.

Report of availability of television spot announcements, relative to venereal diseases, for use by local stations should they be agreeable to devote free time as a public service to the presentation thereof. Referred back to the Committee for investigation and specific recommendation.

Regarding physician association with osteopaths relating to civil defense, it was determined that, in the establishment of any policy dealing with the subject, that ArMA extend its cooperation. It was suggested that this viewpoint be referred to the Chairman of the Subcommittee on Allied Professions, of the Professional Liaison Committee, for his information and guidance.

The matter of proposed legislation creating a Division of the State Health Department, to be known as the Commission on Alcoholism, referred back to the Committee for study and recommendation.

Resolution of the Arizona Academy of General Practice, referable to the Arizona State Hospital, tabled.

Notice of the 17th National Conference on Rural Health, sponsored by the AMA Council on Rural Health, to be held at Columbus, Ohio, March 6th and 7th, 1964. Received.

Recommendation of the Coconino County Medical Society that Hugh E. Dierker, M.D. (Flagstaff), be selected as a nominee for appointment as a member of



# Arizona Medical Association Reports

the Board of Directors of the Arizona State Hospital. Received.

Referred to Doctor Brewer the matter of review and activity relating to rural health, of interest to the Woman's Auxiliary.

## Professional Liaison Committee

Recommended salary increase of Director of the State Department of Health to \$22,000.00, additional personnel to be provided in the 1964-1965 budget of the State Health Department, without specific comment as to the budget itself. Received.

In the matter of hospital licensing and convalescent homes, it was suggested pathological and x-ray laboratories be closely adjacent to hospitals and registered nurses be on duty twenty-four hours a day in these hospitals. Recommended action be deferred until proposed rules and regulations have been adequately reviewed and studied. It was directed that these points of view be referred to the Arizona State Board of Health for its information.

Directed that AMA be informed, through its Joint Commission on Medicine and Pharmacy, of the report of the Arizona Pharmaceutical Association relating to pharmacy ownership by physicians.

AMA reports National Voluntary Health Conference to be held in Chicago September 17th and 18th, 1964, designed to delineate the physician's role and to disseminate information to the medical profession about the organization, scope, financing, programs and services of the voluntary agencies. Determined to refer to the Professional Liaison Committee this proposed program with instruction that it take an interest in the matter.

MEETING ADJOURNED FOR LUNCH AT 1 P.M.  
MEETING RECONVENED AT 2:15 P.M. ALL MEMBERS PRESENT DURING THE MORNING SESSION RESPONDED "AYE" TO THE ROLL CALL, EXCEPTING DOCTOR ARNOLD H. DYSTERHEFT AND DOCTOR NOEL G. SMITH. JAMES E. O'HARE, M.D., VICE-PRESIDENT AND CHAIRMAN, PRESIDING.

## Public Relations Committee

Received report of Doctor Steen outlining "Operation Hometown" activities during 1963 and commended the participating Counties for their cooperation.

## Scientific Assembly Committee

Doctor Brewer reported on the completion of the program of the 73rd Annual Association Meeting.

Doctor Brewer further reported on the exploratory meeting held in regard to research being conducted relating to "Arizona Territorial Medicine." The second meeting is scheduled to be held at 4 P.M. just prior to the annual meeting of the Board of Directors, to be held at the San Marcos Hotel, Chandler, Arizona, April 28, 1964.

It was agreed that the Honorable Harold Giss, Senator of the State of Arizona, be invited as a guest to attend the annual dinner scheduled for the evening of April 28, 1964, in Chandler.

## Charters

Approved preparation and introduction into the House of Delegates at its forthcoming annual meeting a resolu-

tion, acknowledging previous issuance of charters to component County Medical Societies and the Constitutions and By-laws of each being thereby ratified, approved, and confirmed as legal, valid and subsisting Constitutions and By-laws. This action is suggested by Counsel, because of the continuing requests from several component Societies seeking dates of issuance of the initial charters and issuance of duplicates.

## AMA House Resolutions

AMA submits resume of actions taken by its House of Delegates December 4, 1963, for the information of the Association. These were reviewed by the Executive Committee in a meeting held February 2, 1964.

## Medicine and Pharmacy

The Commission on Medicine and Pharmacy, composed of representatives of the AMA, American Pharmaceutical Association, and the National Association of Retail Druggists, invites representatives to attend the National Congress on Medicine and Pharmacy scheduled to be held March 12th and 13th, 1964, in Chicago. It was determined that Doctor Jarrett and the Executive Secretary shall attend this Congress, expenses to be reimbursed by AMA.

## COMMUNICATIONS

### Legislation

The proposed amendment to Section 36-601 ARS, relating to prescribing penalty for committing public nuisances dangerous to public health, contained in House Bill 78, introduced January 15, 1964, in the Arizona State Legislature, was reviewed. On direction of the Legislative Committee, the subject was referred to the Arizona State Department of Health for comment and enlightenment as to the purpose of the measure. An Attorney General opinion is being sought, especially as the result of a recent Supreme Court decision in Arizona reflecting upon the constitutionality of a somewhat similar Section of the Arizona Revised Statutes 8-601. While the desire for speedy and efficient administration of a Statute is understandable, perhaps of more importance is the assurance of right of appeal and equally swift. Received, no action being indicated at this time.

## OTHER BUSINESS

### Robins Community Service Award

In connection with the annual A. H. Robins Company "Community Service Award," it is reported that recommendations have been received nominating Walter Brazie, M.D. (Kingman-Mohave), Kenneth C. Baker, M.D. (Tucson-Pima), and Paul L. Singer, M.D. (Phoenix-Maricopa). Following due consideration, Doctor Brazie is officially nominated to receive the 1964 Award.

### AMA Legal Conference

It was reported that the AMA is scheduling its Legal Conference to be held in Chicago April 16 through 18, 1964. This meeting is designed primarily for the benefit and edification of Counsels, representing Medical Societies throughout the states, together with the Executive Secretaries. It is one desirable to be attended by both Mr. Jacobson and Mr. Carpenter. However, in the latter instance, the Board of Medical Examiners, State of Arizona, is scheduled to meet on these same



days, and it would appear the Executive Secretary is not free to attend. Mr. Jacobson advised it is possible he may be in the Chicago area on other business at the time of this meeting, under which circumstances he will be more than happy to take advantage of the opportunity of attendance.

## Medicare Fee Schedule

Authorization given to release to the United States Public Health Service, Division of Indian Health, Albuquerque area, a copy of the Arizona Medicare Manual.

## Governmental Institutions — Nurses

Doctor Brewer reported he had been contacted by representatives of the Arizona State Nurses Association; Arizona Licensed Practical Nurses Association; and the Maricopa County General Hospital relative to the possibility of employing non-citizens in governmental service in Arizona, which would require an amendment to the Constitution of the State of Arizona. It appears that qualified nurses, licensed practical nurses and interns and residents in approved training programs may not be compensated by City, County or State Governments unless they have completed all requirements and received full citizenship in the United States, which brings about what is alleged to be unfair competition for the services of these qualified personnel between these governmental institutions and private organizations. It was requested by those organizations aforementioned that medicine give consideration to the problem and express their recommendations relative thereto.

It was determined to postpone to an indefinite time, further consideration of this problem.

## Membership Transfer

Referred to Counsel for review is the matter of transfer within the state of membership from one component County Medical Society to another, especially involving the matter of residence versus location of practice.

MEETING ADJOURNED AT 5 P.M.

Charles E. Henderson, M.D.  
Secretary



## SOUTHWESTERN SURGICAL CONGRESS Sixteenth Annual Meeting

Granada Hotel  
San Antonio, Texas

**April 27-30, 1964**

Distinguished Guest Speakers  
Panel Discussions and  
Roundtable Luncheons

Entertainment  
Ladies Activities

Contact:

Robert B. Howard, M.D.  
301 Pasteur Medical Bldg.  
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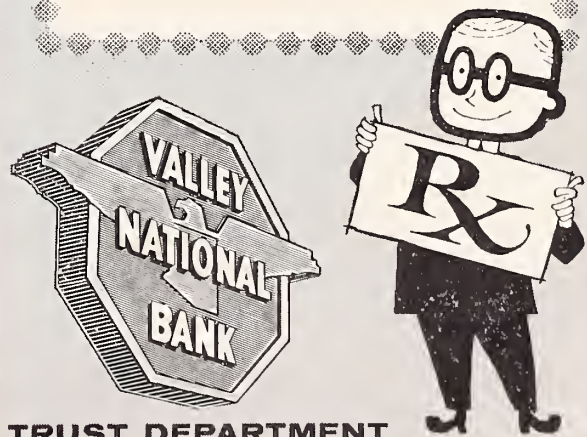
## "Dear Doctor:"

In your busy night-and-day preoccupation with other people's lives, it is very difficult for you to find time to think about your *own* future.

Yet face it you must for the sake of your family.

We urge you to join with our many other friends and customers of the medical profession, and arrange for a visit — with your lawyer — to our Trust Department.

Discuss your estate plans in detail. Let an experienced Trust Officer show you how the group-judgment of specialists in the Trust field will insure your estate being handled soundly, economically — and to the letter of your Will.

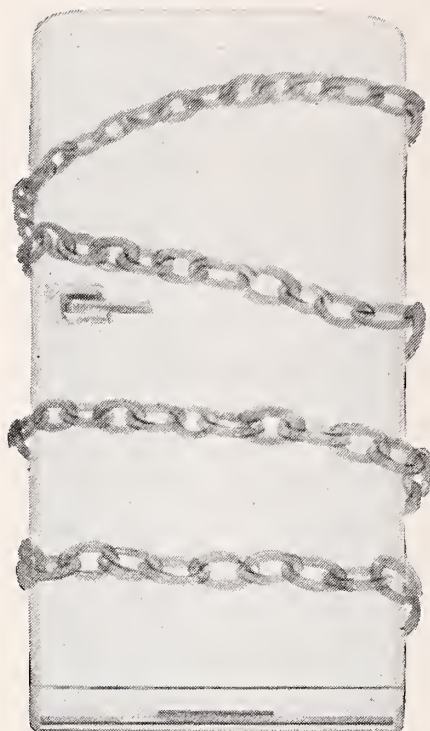


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an easier way?

# **'METHEDRINE'<sup>®</sup>** brand **METHAMPHETAMINE HYDROCHLORIDE**

is an easier way to help control food craving & keep the reducer happy

With "hunger pains" abolished, the patient can shrug off the chains of psychogenic craving that bind him to his habit of overeating and cooperate cheerfully with the prescribed diet.

In obesity, "...our drug of choice has been methedrine (methamphetamine hydrochloride)...because it produces the same central effect with about one-half the dose required with plain amphetamine, because the effect is more prolonged, and because undesirable peripheral effects are significantly minimized or entirely absent." Douglas, H. S.: West. J. Surg. 59:238 (May) 1951.

**Description:** Each scored tablet contains 5 mg. 'Methedrine' brand Methamphetamine Hydrochloride.

**Dosage:** 2.5 mg. (1/2 tablet) 3 times daily. May be increased gradually according to response; more than 10 mg. daily rarely is needed. The last dose of the day should not be taken later than 6 hours before bedtime.

**Side effects:** Insomnia may occur if taken later than 6 hours before retiring. The usual peripheral actions of sympathomimetic amines (vasoconstriction and acceleration of the heart) are minimal and little noticed on low or moderate dosage.

**Contraindications and precautions:** Should not be used in patients with myocardial degeneration, coronary disease, marked hypertension, hyperthyroidism, insomnia or a sensitivity to ephedrine-like drugs. Moderate hypertension in the obese is not necessarily a contraindication since it may be relieved as the overweight is reduced.

**Supplied:** Tablets 5 mg., scored, in bottles of 100 and 1000.

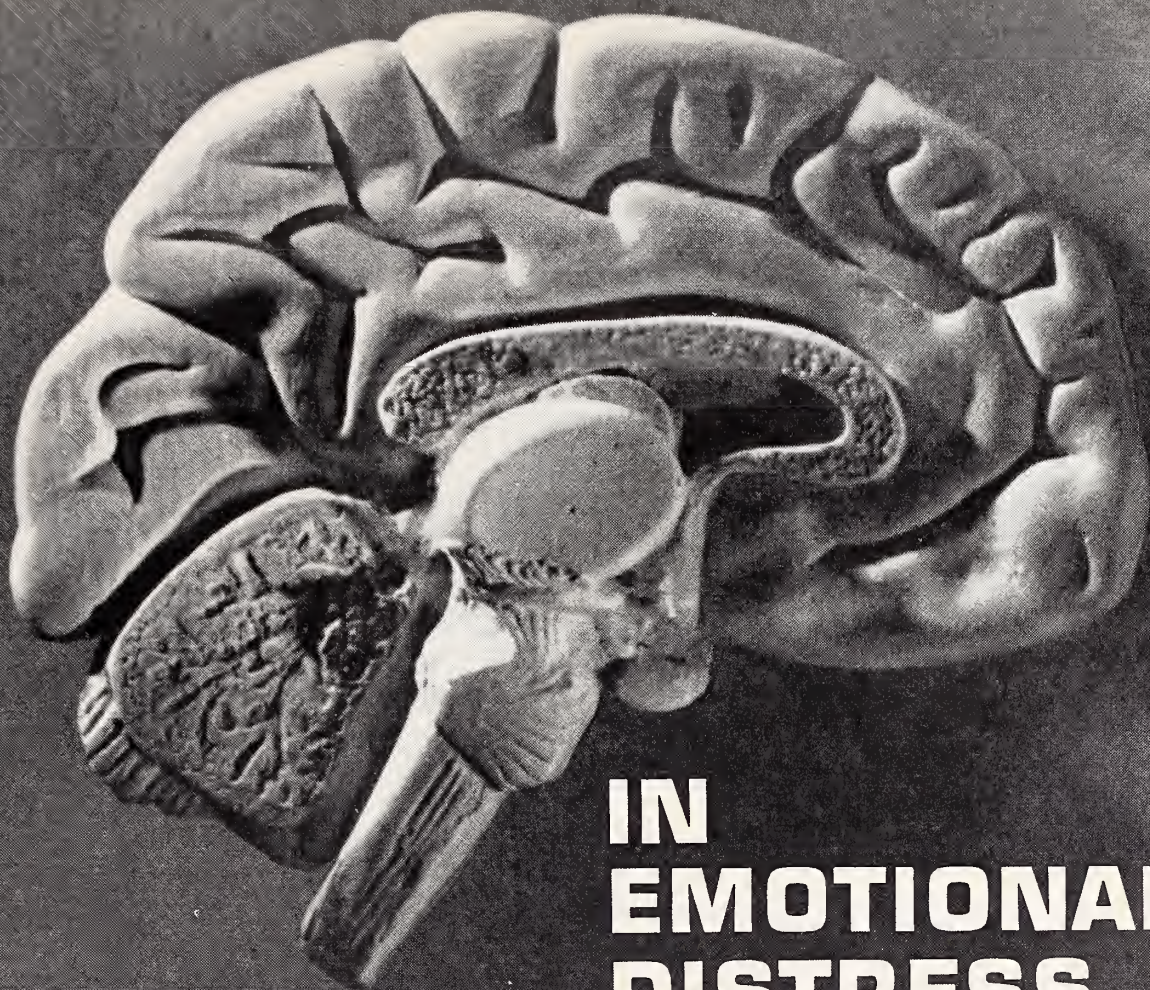


Complete literature available on request from Professional Services Dept. PML.

**BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.**

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## IN EMOTIONAL DISTRESS

# RELIEVES ANXIETY, APPREHENSION AND TENSION...



*All day long*

... keeps the patient calm,  
and the mind clear.



*All night too*

... aids restful sleep, with  
no barbiturate hangover.

## MEPROSPAN®-400 (MEPROBAMATE 400 MG. SUSTAINED RELEASE)

*Simplified, convenient dosage for emotional relief.*

**Side effects:** 'Meprospan' (meprobamate, sustained release) is remarkably free of untoward reactions. Daytime drowsiness has not been reported. Rare allergic or idiosyncratic reactions may occur, generally developing after 1-4 doses of the drug.

**Contraindications:** Previous allergic or idiosyncratic reactions to meprobamate contraindicate subsequent use.

**Precautions:** Should administration of meprobamate cause drowsiness or visual disturbances, the dose should be reduced. Operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Prescribe cautiously and in small quantities

to patients with suicidal tendencies. Massive overdosage may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after prolonged use at high dosage.

*Complete product information available in the product package, and to physicians upon request.*


**Usual adult dosage:** One 400 mg. capsule or two 200 mg. capsules at breakfast; repeat with evening meal.

**Supplied:** 'Meprospan'-400 (meprobamate 400 mg.), 'Meprospan'-200 (meprobamate 200 mg.), each in sustained-release capsules. Both potencies in bottles of 30.

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*the vat  
that foils  
the "leakers"...*

"Leakers" are ampoules with minute imperfections in the seal. You can't readily see the flaw, and often it's so small that liquids won't even drip through; but microscopic contaminants can slip in to render the contents nonsterile and potentially dangerous. ■ Detecting "leakers" is the job of the vat and the blue dye. ■ Sealed Lilly ampoules are placed in baskets, submerged

in a vat containing methylene blue, and subjected to a vacuum. If there is an imperfect ampoule in the lot, the liquid is forced out. When the vacuum is released, the blue dye rushes in. ■ With dye as the spy, elusive "leakers" are quickly spotted and rejected . . . another of the many controls that add immeasurably to the quality of the finished product.

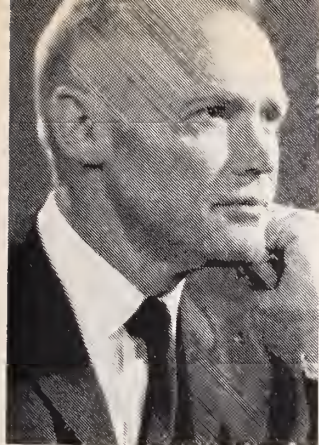
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Rev. Dr. McCleave

## Man Is A Total Being

by

The Rev. Paul B. McCleave, LL.D.

Man's various and sundry ills are not all caused by a breakdown or malfunction of the physical body; nor can they all be cured by drugs or the scalpel. Some of his troubles are due entirely or in part to mental or emotional disturbances, while still others are surely at least aggravated, if not caused, by spiritual conflicts within himself.

Perhaps the majority of illnesses can be treated by a skilled physician. However, an ever-increasing number, it seems, require the analysis and therapy of a well-trained psychiatrist; while still others can apparently be helped or comforted only by the understanding heart of a man of God — a member of the clergy.

Hence, to successfully treat "The Whole Man" may require the cooperative effort of the "team." And this team may include any or all of: Patient, physician, minister, nurse and members of the patient's family. The American Medical Association recognized the need for such a team approach when it established the Department of Medicine and Religion in 1961, and the Rev. Dr. McCleave, director of this new department, tells us of the concept of treating the whole man in this paper.

THE age-old question, "What is man?" is studied by medicine, by theologians, by philosophers, sociologists, psychologists, and all fields dealing with the human being, man. What is man? Too frequently each profession in its own way has concerned itself with man only within its own aspect of thinking. The theologian considers man as a creation of God, a child of God, a being of God, and what is his relationship to God. The physician oft times has considered man as a physical being, a biological entity, composed and developing within itself frequently organic illnesses, and yet at the same time recognizing that many patients have no organic illness. The

other professions — they, too, in their fields look upon man solely within the scope of the information and the knowledge which they seek characteristic of their field of study. Granted that through the years there have been many who have concerned themselves with the fact that man is a total being, that man cannot be categorized in separate areas and divisions to be cut apart as a jig-saw puzzle. Only man himself is concerned with putting the pieces of the jig-saw back together again to make him a whole being. Yes, today we are concerned as physicians and as clergymen of man as a total being. That when we treat and care for man, we must involve all parts of him if he is to find total health. May I suggest for our thinking today that we consider man as a being — physical, spiritual,

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Rev. McCleave is Director of the Department of Medicine and Religion of the American Medical Association.



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emotional, and social — recognizing that illness in any one of these parts can create illness in all four factors. Health is more than physical; health is more than spiritual; it is more than mental or social. Health must be considered from all factors of which man is composed — not as a jigsaw puzzle but as a wholeness, as a oneness, for man is a total being.

One need not describe all the advances that we have made in the past 25 years or 50 years. We can talk of space; we can talk of scientific discovery; we can talk of new concepts of God; we can speak of social advancement, the probing of the mind, the new knowledge that we have in all things whether it is in our own field or in all fields of science and of knowledge. There was a time when an individual person could consider himself well educated perhaps in a study of the liberal arts, humanities, involving there the sciences. He was enabled to speak to any group and comprehend what man was speaking. But today it is necessary that we specialize. Our schools are crowded with students striving to comprehend and understand only a segment of all knowledge that is available for man.

The curriculums in our medical schools and our theological seminaries are characteristic of all education. There is not adequate time to prepare a student with all that he needs to know. In our educational world, where in times past a man with an A.B. or B.S. degree was adequately prepared to be a professor, a teacher, finds today that he must spend more time in school, more time in preparation. Degrees do not mean an educated man, but at least it gives him the opportunity of being confronted with additional education — a master's degree, a Ph.D. degree — almost a common necessity for anyone who would be in the field of education.

**O**FTEN today someone will say I wish that I had a family doctor as the old days, one who could bring his little black bag and sit in my home and make me well. But as physicians we well know that no physician knows all medicine. Fortunately for the physical health of man the advancements of scientific medical knowledge are so vast that it requires us to limit ourselves to our practice, to our understanding, and to our knowledge. We specialize that we might give the finest of care to our patient. The clergyman finds himself much in the same place. Modern theology has many aspects. Its scope is beyond

the thinking of any one man. We can name Barth, Tillich, Weigel and others who are deeply concerned and have set for us a pattern of theology and thinking, and yet none of us know all that these men have to offer. We confine ourselves to our own faith, our own dogma, our own creeds because they, too, have become so broad in their aspect, their scope, and their concept that no clergyman, as any physician, can know all that there is to know. Is it not possible then for us to admit that when we are concerned with the total of being of man and his total health that no one of us has all the information, all the knowledge, all the experience that is necessary to make possible the total health of man in his total being?

In medicine as we are treating our patient there are times when we seek our colleagues in other areas of medicine, in other specialty fields, seeking their consultation, guidance, and direction that a patient may receive the finest of care. We also recognize in medicine that the majority of our patients that we see are not ill from an organic illness, but they are ill and as physicians it is our responsibility and our concern to overcome that illness. Is it then strange that American medicine should be concerned today of developing an opportunity wherein the physician and the clergyman might become colleagues, might seek each other out in consultation when we are confronted with a patient or a parishioner in certain circumstances that require more than our own knowledge. Granted every patient that we see does not require a clergyman, nor does he require the consultation of other specialties any more than every parishioner that a clergyman sees requires a physician, a clinical psychologist, or a psychiatrist. But there are times, and there are circumstances wherein we do find it a necessity to seek a colleague that can assist us to penetrate into the illness of the patient that is outside of the field of our comprehension or our experience. As a man of compassion, as a physician, we can offer to our patient all possible ways to total health.

**F**AITH is a strange word. Oft times we toss it out the window because we like to say faith is all spiritual; faith is only religious; and I am not going to become involved with the doctrines and the creeds of the various religious groups of the world. But faith is more than being con-



fined to a particular institutionalized religious sect. I would make a bold statement that every man has a faith. It may be a simple faith of a little child to its mother. It may be the faith that a man has in himself that he is able to overcome all obstacles, all problems, and make all decisions. It may be a sincere, devout faith in God. It may be a faith in something other self. Even the most arrogant agnostic finds himself in contradiction because he does have a faith. It may be in men, in drugs, in a creator, or a family, but he has a faith. The faith of the individual patient is a vital factor in total health. It is not a matter of whether we agree or disagree or accept his particular type or degree of faith. The patient has a faith, and we must treat that patient within the realm of his faith. Is there a surgeon who has never heard a patient say, "I am going to die." Yet from our experience we know that physically there seems to be no reason for it. Immediately we recognize that the patient urgently needs informed counsel, for strange as it may seem, he will die unless we find consulting help. How do we approach the patient who says, "Doctor, this is God's punishment; I must suffer, and I must struggle with this disease, this racking of my body, this burning up of fever." What is the reason that some patients have the courage, the strength, and the will to live? Why do some give up too soon? What is this faith? It is a strange word, and long papers could be written in definition and description, but I believe this is adequate to make my point clear that regardless of whether you or I agree or disagree with a patient's faith we must treat and care for that patient within that faith.

There are a number of isolated illustrations that all of us have been confronted wherein I believe the physician is seeking help in the decisions that are constantly being made by him for though we would like to remove ourselves from that place of decision making it is our responsibility as physicians, and though we may ask for guidance and help from others, it is still our responsibility. These illustrations that I suggest to you will, I believe, open up some questions in our minds for our discussion. Within our county medical societies we need to bring the clergy into communication to discuss these things, and to discuss many areas of concern that as colleagues we may do the task of making possible total health for the total being of man.

A YOUNG MAN, 37 years of age, is referred by his local physician to a surgeon in a major city hospital. An incision is made and wide spread cancer is found. The incision is closed. Death is imminent. What shall we tell the wife who is the mother of three young children? Does the patient have a right to know that death is imminent? Doesn't any patient have the right to have the privilege and the opportunity of setting his spiritual and secular life in order? Some would say that the three to six month period should not be placed in the realm of grief; that the lack of knowledge of imminent death on the part of the patient would create patience and courage. I know of a case such as this where the patient was informed and after death had come the wife stated, "Our three and one-half months were months of the greatest love and affection that we knew in our entire life."

The clergyman and the doctor are both men of compassion who are concerned about the patient, his life, his being, his family, and his existence. Working together with the patient and the family an adequate answer can be found to this problem.

To what extent should extra-ordinary measures be taken in the treatment of a patient in order to sustain life? It is the physician's task to sustain life. Yet, one must recognize that there are problems involved and no general answer can be given. To find a proper answer involves more than one making a decision as in many cases when we are confronted with this problem we recognize that the patient's family oft times creates a more serious problem than the patient himself.

A being is born without mentality, physically deformed, in a weakened condition. With the advances we have made in our medical knowledge and the use of modern drugs this being can be sustained to exist five, ten, fifteen, twenty years or more. How is the family approached? What can be said to the mother? Who knows this family? Physicians who are faced with this matter normally can amply handle the problem, but there are circumstances where once again we must recognize that a religious faith enters into the care and the treatment. What do you say when the mother says, "This is God's punishment." What is the answer for we may find ourselves with a mother who becomes seriously ill because of this life that has been brought into being.



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WHERE do we learn concerning faith other than our own? In many faiths of men there are tenants, doctrines, teachings, and traditions of the church that affect medical treatment and care. What is the place of sacramental services within a person's life? What bearing and meaning does dietary law have? What about the patient who refuses vaccine, inoculation, or transfusion because of a belief? There was a time when most of us returned to a community of our own upbringing, returning to a cultural, traditional situation wherein we knew the people, we know the community, we understood the faith of men. But today with the transit population of America, physicians are confronted with patients of religious faiths and beliefs which they have never experienced. Do we learn by embarrassment? Do we learn by ignorance? How can we learn?

These illustrations are only a few of many. But, they do perhaps bring to our mind the reason that American medicine through the American Medical Association has established the Department of Medicine and Religion whose sole purpose is to create an intercourse of communication between the physician and the clergyman relative to the total care and treatment of the patient. The department has had the privilege of visiting with many of the physicians across the country. Arizona was chosen as one of our pilot states, and here I have had the opportunity of visiting with many of the physicians of the state, several of your state officers, the various areas of medicine including psychiatry. From you, we in the department have been able to formulate suggestions and ideas which might be made available to the country medical societies when they bring into their midst the clergy to talk and concern themselves with the total being of man.

IN SOME twenty county medical societies this past fall and winter actual programs were carried out. There were outside speakers; there were panel discussions; information was given and much discussion. Activities here in Arizona

included a meeting in Phoenix and a meeting in Tucson. It opened to our minds the very potential and the vital reason for such programming. Some of the questions perhaps seemed foolish to some, but they were sincere questions both on the part of physicians and clergymen. As men of compassion they are compassionately concerned about the total health of man. They saw and recognized that they needed to discuss and to formulate ways and means in which one could assist the other in bringing about total health.

The procedure and plan of the department at A.M.A. is to be a servicing department to each state. The state council is being invited to establish a state committee on medicine and religion. Here in Arizona, Doctor Delbert L. Secrist of Tucson is the chairman of such a committee. This committee will meet and make plans wherein the county medical societies throughout the state will be encouraged to participate in these communications. A manual has been prepared from the results of the pilot county studies we made this past fall and winter. This manual will include invitations to the clergy, types of meetings, various topics that might be discussed, procedures and ways of carrying out the meeting. I cannot impress upon you the importance and the vital reason for having such a program within your county.

In conclusion — may I again repeat, man is a total being. He is physical, spiritual, emotional and social. His health is dependent upon the good health of all four factors of his being. His faith gives reason for his action. His faith is a vital part of the success of his striving toward good health. As physicians, men of compassion, deeply concerned about each patient, we should consider and seek out our colleagues in many fields who can serve the patient with us in bringing about total health. There is a place for the clergyman. There is a task for the physician. The two together, working hand in hand in complete trust, can continue American medicine's efforts to bring the finest of medical care to all the people.

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ATTEND THE 73rd ANNUAL MEETING





Dr. Sheeley

# The Family Physician's Unique Position In Psychiatric Therapy

by

William F. Sheeley, M.D., F.A.P.A.

**A little knowledge is not a dangerous thing. It is much safer than no knowledge at all. The family physician has a great deal more psychiatric information than does the ordinary patient. The really time-consuming problem is to bring the patient up to his level of understanding and reasoning.**

**D**OES THE family physician have something unique to offer the mentally ill person? Can he help the psychiatrist deal with the overwhelming number of people who need help with their emotional disturbances? Many authorities say that he not only has something unique to offer, but that he is already offering it, whether he wants to or not, and whether we in psychiatry expect him to. He gives help because people faced by psychiatric problems naturally turn to him first.

As Viets<sup>37</sup> says:

Some [patients] are referred directly [to the psychiatric hospital] for psychiatric observation, but, in most instances, they come first to the general practitioner. He is the one who encounters with beginning mental disease of sufficient severity to call for observation in a mental hospital.

There is no escaping the fact that the general practitioner is on the front line. If we are to make any progress whatever in dealing with the psychiatric patient . . . considerable psychiatric work has to be, and should be,

done by the general practitioner. . . . The difficulty . . . has been that, in the period of specialization, there has been a tendency to look more and more at the part and less and less at the whole patient and, as a result, the whole patient has suffered.

Despite the considerable outcry that the physician should consider the patient a complete entity, and that he should take the patient's emotions into account as he treats him, the idea is not exactly new to our century. In the year 1883 Mills<sup>28</sup> wrote:

The early recognition of some forms of insanity is often of the greatest moment . . . (A) patient may be saved from disgrace or dishonour in the eyes of others, or a family may be rescued from impoverishment or disinheritance by the early recognition of the disease by the family physician. . . .

If cases of insanity were treated properly, early, more would recover, and would not require to be sent to asylums at all.

Any physician may be called upon . . . to manage and treat cases of insanity. Even in moderate practice he is as likely to see as many cases of insanity as he is of some other diseases, about which long courses of lectures are delivered.

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Seventy years later, Hargreaves<sup>18</sup> felt impelled to say

. . . the problem still remains — indeed, with the development of psychiatric knowledge it has increased — of the patient whose future health depends upon the family doctor's ability to recognize early the individual whose condition needs specialist facilities and attention . . . If he fails to suspect schizophrenia long before the patient is a danger "to the public peace," the fault lies not with him, but with those who teach him.

Nor can the family doctor depend entirely on the mental health professional who is not a physician, warns Brosin<sup>5</sup> in the year 1962. He says:

It is [in diagnosis] that the physician is indispensable, and cannot be replaced by laymen, no matter how skilled they may be in their profession. A disturbed alcoholic, epileptic, manic, or hysteric may also be suffering from drug ingestion, renal or liver disease, arteriosclerosis, diabetes or heart disease. A patient showing a behavior disorder complicated by alcoholic or drugs may also have endocrine disorders, a brain injury, or brain tumor.

Part of the family physician's uniqueness stems from the fact that people with emotional problems — which often arise from psychiatric illness — often come to him first for help. Indeed, the family physician is second in this regard only to the clergyman. Since the clergyman refers to physician those troubled persons whom he considers sick, the family physician usually offers the first medical help which psychiatric patients receive. He therefore has a unique role in psychiatric case-finding. Families distraught from the behavior of sick members come to him. He is more apt to see patients who are threatening suicide<sup>29</sup> either openly or subtly.

He may also be the first to encounter the psychiatric patients as he treats somatic illness, for somatic illness and psychiatric illness tend to go together. Often the ostensible symptoms of somatic illness are really those of underlying psychiatric illness. Or, conversely, the ostensible psychiatric symptoms are really those of incipient but as yet undetected somatic illness such as cancer or brain tumor.<sup>30</sup> For example, in a controlled study comparing 471 psychiatric patients with 480 controls, Roessler and Greenfield<sup>32</sup>

found significantly higher prevalence of somatic illness among the psychiatric patients.

On the other hand, somatic illness seems always to produce at least some measure of psychiatric disturbance. As Hinkle<sup>19</sup> put it:

One finds no illness which is not in some degree influenced by the way that men react to what goes on around them, and none that does not occur sometimes in association with manifestations of mood, thought, or behavior. Nor is there any reason to doubt that any disease that can be brought into awareness may play a role in the thoughts and emotions of the person, or conversely, that any process within the central nervous system that is perceived as "thought" or "emotion" may, in some manner and in some degree influence the course of any disease. The question, therefore, is not one of whether or not these things can occur; the question is, "In what manner, when, and to what degree *do* they occur, and how relevant are they to the illness?"

The family physician sees many patients with apparent physical disorders who really have psychiatric problems. Speaking of such a condition as sexual frigidity in women. Kleegman<sup>22</sup> observes:

It is the general practitioner who sees most of these problems and who could do the greatest good if he were educated in this phase of medical practice. Only a small number of women have frigidity as a part of neurosis so severe that they need referral for the necessary psychiatric treatment. The general practitioner could be taught to differentiate the one from the other.

Growing numbers of psychiatrists and other physicians conclude that the family physician is uniquely situated to serve as a coordinator of therapies. It is the family physician who will re-integrate the patient who has been dissected into organ systems by medical specialists. Weijel<sup>39</sup> sees the family physician as interpreter. He says:

The general practitioner . . . represents medicine and medical science for the layman . . . He must explain to the patient what is wrong with him, what measures must be taken and why. He is the real physician who helps the patient, with the assistance of the specialists and the medical technologists of the clinic who are his advisors . . .

Skottowe<sup>34</sup> urges that the family physician stay



in the center of things and take an active part in all arrangements for the patient.

May<sup>27</sup> decries any effort to separate the psyche from the rest of medical concern when he says

... treatment of the mind ... is ... an essential part of the battery of treatment that should be applied to the correction of *all* pathological changes not only the so-called psychiatric ones. The removal or identification of stress-causing factors in the environment is an indispensable adjunct to any and all therapies, but *vice versa*, the exploration of the soma and its treatment is as essential in mental illness as it is in tumors of the uterus. . . .

Psychotherapy . . . should not be limited to mental disorders. It is part of the therapeutic arsenal of medicine and should always accompany any other therapeutic technique, whether this technique takes the form of a pill or of a surgical operation . . .

Abrahams<sup>1</sup> supports the family physician as medical coordinator with the argument:

I must strongly emphasize that there is only one doctor responsible for the whole patient, and he is the family doctor. Once this is ignored, whether by the doctor himself, his patient, or a specialist, there is risk that aspects of the patient's illness will be treated, but not the patient himself. All family doctors know the patient with multiple symptoms who have seen several specialists. . . . If the family doctor is not prepared to undertake his function of coordination, and continuing responsibility, there is a risk that the patient will suffer from piece-meal treatment.

Accordingly, Watts<sup>38</sup> offers the following list of functions of the family physician in the psychiatric team:

(1) He is the most important centre for early diagnosis;

(2) he is the coordinator-in-chief between the patient, the consultant, and the medical auxiliaries;

(3) he is or should be largely responsible for after-care;

(4) he has an important function in the care of the elderly.

In summary, Abrahams<sup>1</sup> says that the family physician is unique in at least the following six aspects:

Firstly, he is the patient's first hand attendant;

Secondly, he is the patient's continuing attendant;

Thirdly, he treats the majority of all kinds of complaints himself;

Fourthly, he is the responsible coordinator of the available services;

Fifthly, he treats not only individuals but whole families;

Sixthly, he is in the front line of preventive medicine.

The family physician logically undertakes responsibility for the combined psychiatric and somatic therapies of the so-called psychosomatic disorders. Since these disorders often derive from closely inter-related emotional and physiological disturbances, correction of the one must depend on the simultaneous correction of the other. Although perhaps such simultaneous approaches to the patient can be made by two different physicians — a general practitioner, say, and a psychiatrist — such combination usually poses unnecessarily complex administrative problems which do not arise when the same physician treats both aspects simultaneously. As an example, Wolf<sup>42</sup> suggests that the family physician use phenothiazines as part of his treatment of irritable colon.

Similarly, emotional reactions to medical conditions require understanding by the family physician. Under these circumstances, of course, only the family physician can detect the emotional concomitant, because only he sees the patient unless the necessity for psychiatric care becomes quite apparent. Even then, he may treat the psychiatric condition. Such concomitants are much more prevalent than is generally realized. Even in an ostensibly "normal" condition such as uncomplicated pregnancy, psychiatric symptoms develop. Bushnell<sup>6</sup> says

... when almost any ... female becomes pregnant, there are a few periods when depression of some degree becomes evident in her responses to her physiologic state. The average patient with a nonpathologic pregnancy exhibits most of her depressive episodes in the first trimester.

Psychiatric principles are becoming more generally used during surgical procedures. Some surgeons, for example, advise that patients receiving elective surgery be admitted to the hospital several days before the actual operation so that their emotional state and personalities can be



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assessed. Simple reassurance of the patient and the administration of psychiatric drugs such as Librium for a few hours prior to the operation serves to reduce the total anaesthetic agent required, to reduce the risk of surgical shock, to hasten the recovery from the immediate effects of the operation, and to shorten the period of post-operative invalidism. Delirium tremens not infrequently overwhelms the chronic alcoholic during the period of total withdrawal of alcohol after surgery; the surgeon who inquires carefully for signs of chronic alcoholism, and who gives the delirium a few days to develop in the hospital prior to the operation may save himself the embarrassing inconvenience of a noisy patient smashing intravenous equipment and tearing open surgical wounds.

Although we have no exact percentages, we can scarcely doubt that the family physician and other nonpsychiatrist doctors deal with the great majority of psychiatric patients actually under treatment. In many cases, the nonpsychiatrist treats the patient only because neither he nor the patient realizes that the psychiatric conditions exists. Fortunately, the simple authority of the doctor, and his intuition enable him to help a substantial number of these patients. But authority and intuition cannot supplant knowledge to recognize mental illness and skill to treat it adequately. Kurland<sup>23</sup> does believe that the doctor's psychiatric ability is growing; he predicts that by 1975, the general practitioner will take over much of the total psychiatric treatment as a natural and integral part of general practice.

Kalis and co-workers<sup>21</sup> urge that the family physician treat more and more psychiatric illness so as to hasten the start of definitive therapy. They say:

The importance of seeing the patient quickly and intensively following his request for help is emphasized for at least three reasons: (1) Because circumstances associated with the disruption of functions are more easily accessible if they are recent; (2) because only active conflicts are amenable to therapeutic intervention; and (3) because disequilibrated states are more easily resolved before they have crystallized, acquired secondary gain features, or become highly maladaptive in and of themselves.

The family physician must for many reasons treat the patient rather than refer him. For one

thing, many doctors practice in towns over a hundred miles from a psychiatrist; only the most urgent circumstances justify referral. For another thing, many patients stubbornly refuse to see a psychiatrist; they need treatment, but not enough to justify commitment. Medically responsibility requires the family physician to treat him.<sup>31</sup>

The so-called ambulatory schizophrenic patient often demands help from his family doctor but refuses referral to a psychiatrist. Of him, Brody<sup>4</sup> says:

His life is sometimes punctuated by flareups of suspiciousness or aggressive excitement, but it is often flat to the point of desperation. Under these circumstances, as his attention is withdrawn from external events and people, he may become preoccupied with his own body and its functions . . . (H)e eventually turns to a doctor — not to a psychiatrist, whom he may consider as a magician or a fraud, or as someone who may deprive him of his freedom — but to a “real doctor” who can relieve him of his concern about his body and upon whom he can be comfortably dependent.

The family physician may treat an illness that is so acute as to require immediate action, or too mild to refer. How many such patients he treats, of course, is determined to some extent by the availability of psychiatrists. Since a psychiatrist may take days or even weeks to see a patient, the family physician may have to use his own resources for some time. During that time, because the acute illness subsides, and the mild illness begins to respond, referral often no longer seems indicated. In this connection, Braunhofer<sup>3</sup> reminds us that depressions are comparatively frequent in the usual practice of medicine, are often very subtle, but rarely are psychotic. He considers the family physician the most suitable person to treat them. Gerty<sup>15</sup> points out that “. . . so-called supportive psychotherapy may be highly beneficial and there is far greater need for it than for . . . intensive psychotherapy.” Reporting that patients tend to recover quickly from acute breakdown due to stress, Kalis *et al.*<sup>21</sup> found that of 40 such patients, 65 per cent recovered with only brief interviews; 30 per cent continued in long therapy, and only 5 per cent required hospitalization.

Hopkins<sup>20</sup>, while recognizing that the family physician is a busy man, thinks he has time to do psychiatric therapy. He says:



Admittedly, psychotherapy takes time; but in my experience, this is time well spent, and in the long run may even be time saved. A few sessions for psychotherapy may take up less time than seeing a patient for a few minutes, to prescribe a placebo, every week for months or years.

Many authors believe that the family physician should concern himself with psychiatric problems such as impotence and frigidity. Werschub,<sup>40</sup> for example, says:

I am just as opposed to the belief that all cases of impotence are best handled by a psychiatrist as I am to the belief that all cases of impotence require a course of instrumentation by the urologist.

Spira<sup>35</sup> advises the family physician offering psychiatric therapy to do a thorough physical diagnostic work-up, to free himself of the notion that a psychiatric patient is not sick, to reassure the patient that he has no somatic illness, and to manipulate the environment as needed, but to be careful that removing physiological symptoms does not release too much anxiety.

The chronic psychiatric patient is one who particularly needs the treatment of the family physician.<sup>8</sup> This treatment may be just to avoid another unneeded surgical operation. It may be to carry along a patient with a chronic neurosis that seems to change little through the years. It may be to help the increasing numbers of patients who are returning to the community from the mental hospitals. As Little<sup>24</sup> describes this contribution:

Much effort is being made to discharge home . . . more chronic schizophrenics. This approach sets a challenge to the toleration of the general public and of the family doctor . . . It is not only more humane to try and establish such people in homes or lodgings or hostels and encourage employment, but the stimulus of this more normal way of life does seem to improve the patient's mental state.

To help the discharged patient, Watts<sup>38</sup> urges the family physician to work with the family, to get the patient to view his own illness as an illness and not a disgrace, to let still-deluded and hallucinating patients discuss their problems and fears in an accepting environment, to help fight the public stigma against mental

illness and mental patients, and to teach families and communities to live with their mentally disabled members.

Both Eaton<sup>9</sup> and Whitehorn<sup>41</sup>, writing separately, affirm their belief that the family physician who has guidance from psychiatrists can contribute much to the treatment of mentally ill people.

For one thing, the family physician has a great advantage stemming from his knowledge of the patient's family and community. As Hargreaves<sup>18</sup> reminds us:

. . . it begins to appear to many psychiatrists that there are many [patients] who could be helped by their family doctors, were the doctors themselves to recognize that such help was within their power, and were they equipped to give it by the education they had received. Indeed, the family physician would start on such a task with an immense advantage thanks to his knowledge and understanding of the family as a whole and his relationship with them.

At the time of referral, the family physician can transfer to the psychiatrist some of the confidence which patient and family have in him.<sup>83</sup> As Farnsworth<sup>11</sup> says of referring physicians:

If by their manner they convey irritation and a negative attitude . . . the psychiatrists who then see the patients have to devote much energy to gaining their confidence and calming their fears. On the other hand, if referring physicians look upon psychiatry as a medical specialty like any other . . . patients who are referred will be given the impression . . . that the experience will be of value . . .

The family physician has learned through the years many things about the family which the psychiatric team cannot practicably discover during the psychiatric diagnostic work-up. Bowen<sup>2</sup> reminds us that:

Family members are quite different in their outside business and social relationships than in those within the family. It is striking to see a father who functions successfully and decisively in business but who, in relation to the mother, becomes unsure, compromising, and paralyzed by indecision.

Maholick<sup>25</sup> believes that the family physician



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should coordinate the multiple community resources required for the multiple needs of problem families. Little<sup>24</sup> backs him up as follows:

There is now widespread acceptance of the theme that much wider home care and treatment is practical and desirable. It demands tolerant concern from all parties — relatives, friends, employers, and professional people. Treatment in their home in the light of newer treatments and attitudes to mental sickness is a stimulating medical and social challenge in which the family doctor must play a key role. In doing so, he may find increasing satisfaction in a sizeable section of his life's work which has previously in varying degrees been a source of irritation, frustration, and embarrassment.

The family physician's central and influential position in the community enables him to make another unique contribution to the mental patient. In most communities — especially smaller ones — the physician is a community leader with intimate access to other leaders. For this reason and others, Farnsworth<sup>11</sup> believes that

. . . the promotion of mental health — and to a large extent the prevention of mental illness — is a responsibility shared by all physicians . . . Physicians, regardless of their special professional interests and practice, should be particularly effective leaders in mental health promotion in their own communities.

And Ebaugh<sup>10</sup> goes on:

. . . the family doctor becomes the central focus. Through him the communication takes place; around him other treatment resources are organized, with primary emphasis on out-patient clinics, psychiatric facilities in general hospitals, and "open" hospitals for psychiatric patients who benefit from partial, but not total participation in the community. The family doctor necessarily becomes the chairman of the board, for he retains the closest contact with the community.

The family physician is uniquely situated to prevent mental illness. Strugis<sup>36</sup>, for example, points out that during the premarital examination the physician can help the woman avoid emotional maladjustments in the coming marriage. Finkle<sup>12</sup> advises the doctor to assure a man facing prostatectomy that his sexual potency will

not be affected by the procedure; psychological impotence can be avoided thereby.

Masserman<sup>26</sup> warns the physician of unintentional iatrogenic psychiatric illness.

A dolorous shake of the head as we fold the stethoscope after listening to his chest — no matter what is said afterward — may mean to him that our all-perceiving ears have heard the footsteps of approaching death.

Or, as Guess<sup>17</sup> points out:

The doctor who does not recognize the fact that his patient is a person in trouble and who after negative tests attempts to reassure him without seeking further for the nature and cause of the anxiety, has utterly failed to treat the patient in his totality. Instead of relief, the patient's troubles are frequently multiplied.

The physician can help prevent disease by helping to change the environment of the community itself, Hinkle<sup>19</sup> tells us:

The physician, who is charged with the preservation of health and the prevention of disease, will concern himself with man's relation to his social environment when this is relevant to his health. If he intervenes in this relation, we can expect that he will do so as a physician acting to preserve health or treat disease. This may make it necessary for him to acquire special skills. . . .

Although the family physician, then, has a unique position relative to patient, family, and community, we cannot truly say that he exploits that advantage as fully as he might. One possible explanation for this is suggested by Gee:<sup>14</sup>

The fault lies not in a confusion of ultimate aims, but in a confusion of knowledge and beliefs with respect to what comprehensive care is, what can or cannot be taught, and who should teach. Which aspects of these problems are rooted in philosophy and which in science? To what degree is patient care a function of the physician's knowledge, of his attitudes, and of his basic personality structure? To what degree should it also be a function of the scientific knowledge of human behavior and of knowledge of sociology or the development of skill in communication and in manipulating patients' emotions and attitudes? Humanitarian concern with the welfare of the patient has been thoroughly confused



with knowledge of psychological and sociological components of organic disease processes, and both of these have been confused with how skill in dealing with the personal and emotional problems of the patients may be developed.

Fischer and Dlin<sup>13</sup> remind us of the emotional problems, within the physician himself, which complicate his management of the patient.

Some authors<sup>24,39</sup> conclude that the medical school, until the very recent past, at least, has not prepared the young physician adequately to undertake psychiatric therapies.

Hargreaves<sup>18</sup> insists that the physician receive formal psychiatric training. He warns us that:

Common sense impels us to dispel our own uneasiness by telling the depressed patient "to cheer up" or the patient with the anxiety state "not to worry." If this is psychotherapy, it is directed towards our own feelings rather than towards our patient's malady.

After having for several years offered a successful course in psychiatry to practicing physicians in Brooklyn, Golden *et al.*<sup>16</sup> conclude that since general practitioners inevitably give modified psychotherapy to their patients, if we teach them the dangers and facts of psychiatry, they will limit their tendencies to do "wild analyses." Whitehorn<sup>41</sup> places the responsibility for teaching other physicians squarely on the shoulders of the psychiatrist.

Fortunately, a great deal of useful knowledge and skill can be imparted to the physician during comparatively short courses that require only a few hours of instruction per week. Obviously, such courses do not produce psychiatrists, but they do, for example, enable physicians to use effectively the brief psychiatric interview.<sup>7</sup>

Psychiatry courses are being offered in ever greater numbers throughout the country. Many physicians who formerly avoided patients now treat them with gratifying relief of symptoms; many physicians who tried to slough off these patients onto psychiatrists or other physicians, now use their unique positions and skills with telling effect.

One can safely predict that as more physicians become sophisticated psychiatrically, the practice of medicine will change basically, and the general level of mental health in the community will rise.

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# Spontaneous Hypoglycemia: Diagnostic Considerations And Management

by

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Dr. Scholz

A valuable review of hypoglycemic disorders stressing the diagnostic differences between functional and organic hypoglycemic states follows. The intravenous sodium tolbutamide and the oral L-leucine testing procedures are described and their limitations pointed out. The interesting problem of large spindle cell tumors with hypoglycemia is discussed. The pathologic findings in 95 proved pancreatic islet cell tumors are reviewed.

**S**PONTANEOUS hypoglycemia may be produced by numerous organic lesions and functional conditions that interfere with normal regulatory mechanisms for maintenance of adequate levels of blood glucose. Some of the common causes of organic hypoglycemia include (1) functioning tumors of the pancreatic islet cells, (2) hypofunction of the anterior lobe of the pituitary gland, (3) primary adrenocortical insufficiency, (4) severe hepatic disease, and (5) bulky spindle cell tumors originating in the thorax or retroperitoneal area. A review of the clinical signs and symptoms which may be associated with hypoglycemia seems unnecessary except to stress that neurologic and psychiatric phenomena comprise the most dramatic manifestations of hypoglycemia. Widespread neuropathy, extensive and irreversible brain damage or both, may result from frequent episodes of hypoglycemia which are unrecognized and untreated.<sup>1</sup>

Functioning tumors of the islet cells of the pancreas constitute an interesting and important cause of spontaneous hypoglycemia. Ninety-five proved islet cell tumors have been found at the Mayo Clinic during the years 1927 through 1958.<sup>2</sup> Eighty-five of these tumors were classified as adenomas and 10 were obvious carcinomas of the islet cells with metastasis. Twenty-four borderline tumors which were interpreted by the pathologists as showing the changes of adenocarcinoma, grade 1, were included in the adenoma group, since it has been shown that although mitotic figures often are seen in the cells of islet cell adenomas, these tumors do not necessarily metastasize.<sup>3</sup> The series was composed of 54 females and 41 males with the peak incidence occurring in the fourth to sixth decades of life. Only one patient was less than 10 years of age.

Patients with functioning islet cell tumors most commonly experience their symptoms during periods of fasting or after vigorous physical exercise. Not infrequently symptoms may appear during the early morning hours. The patient may awaken in a state of confusion and exhibit

<sup>1</sup>Lecture delivered at the Tucson Medical Center on the evening of April 6, 1962.

<sup>2</sup>Section of Medicine, Mayo Clinic and Mayo Foundation, Rochester, Minnesota.



bizarre behavior patterns. Fifty-eight of our patients reported early morning symptoms which could be definitely associated with hypoglycemia. On rare occasions a nocturnal convulsive seizure may be the first inkling of trouble. After a careful review of these cases from the neurologic viewpoint, Mulder and Rushton<sup>1</sup> concluded that hyperinsulinism is a rare cause of true epilepsy, inasmuch as epileptic seizures were the first manifestations of hyperinsulinism in only three of 91 cases in which adequate clinical information was available. They pointed out that the cerebral symptoms of hyperinsulinism, which may masquerade as epilepsy, usually can be recognized by their gradual onset, persistence for hours, and variability in expression. Nevertheless, the occurrence of periodic and bizarre cerebral symptoms in any patient with a convulsive disorder should arouse the physician's suspicion concerning the possible presence of unrecognized hyperinsulinism.

ALTHOUGH the values for overnight fasting blood sugar in patients suspected of having hyperinsulinism may be within normal range, 69 per cent of the clinic patients had values that were 65 mg. (per 100 ml. of blood) or less by the Folin and Wu method. The intolerance of patients with functioning islet cell tumors to prolonged fasting has formed the basis for one of the most reliable diagnostic procedures. Patients are hospitalized and fasted, if necessary, up to 72 hours. They are kept exceedingly active during waking hours. Production of a typical attack with proved concomitant hypoglycemia and relief of signs and symptoms with the administration of glucose then fulfills the diagnostic criteria outlined by Whipple.<sup>4</sup> Analysis of the results of fasting in 79 cases revealed that a typical attack of hypoglycemia could be demonstrated in 74 per cent of the patients within 24 hours after induction of the fast. In only two patients was it necessary to continue the fast longer than 48 hours (table 1).

TABLE 1 Duration of Fast Necessary to Produce Hypoglycemic Attack					
Condition	Number of patients studied	Duration of fast (hours)			
		12 or less	13 to 24	24 to 48	More than 48
Adenoma . . . . .	74	25	29	18	2
Metastasizing carcinoma . . . . .	5	1	4	0	0
Total . . . . .	79	26	33	18	2

Newer provocative diagnostic procedures have been introduced recently in the form of the intravenous injection of sodium tolbutamide as described by Fajans and co-workers<sup>5</sup> and the oral administration of the L-leucine as reported by Schwartz and associates.<sup>6</sup> The intravenous tolbutamide test promises to be a valuable adjunct in the effort to establish the presence of an insuloma in a patient with spontaneous hypoglycemia. Under their rigid criteria, Fajans and co-workers<sup>5</sup> reported only one false-positive response to tolbutamide given intravenously and stressed that the persistence of the induced hypoglycemia for 3 hours or more is of more diagnostic importance than the level of maximal depression of blood sugar concentration per se. We have observed an exacerbating influence of L-leucine taken orally on the production of significant hypoglycemic levels in four patients subsequently proved to have functioning islet cell tumors. However, significant lowering of the blood sugar after the administration of this amino acid does not develop in all patients with proved insulomas, nor is the response specific, since similar observations have been made in children with so-called idiopathic familial hypoglycemia.<sup>7</sup>

AT THE time of surgical intervention, if a pancreatic islet cell tumor cannot be identified grossly or by palpation when its presence is suspected by the clinical history and laboratory findings, it has been the practice at the clinic to resect the tail and body of the pancreas over to the superior mesenteric vessels. Some surgeons have advocated resection of the remaining portion of the pancreas at this time if the pathologist does not report a tumor in the resected tail and body of the pancreas. However, under these circumstances it is our practice to defer further removal of pancreatic tissue, since not infrequently the pathologist may locate a small tumor only after a minute detailed examination of the surgical specimen. The surgeon found the tumor during the first operation in 77 of the 91 patients and at the time of the second operation in five patients. The pathologist was able to identify a tumor in the surgical specimen in nine cases when it could not be identified grossly by the surgeon (table 2). The tumor was identified at necropsy in only four cases.\*

\*Cases of multiple endocrine adenomas including functioning islet tumors observed at the Mayo Clinic as reported by Underdahl and associates\* are not included in this series.



TABLE 2  
Pathologic Findings and Sex Relationship in 95 Patients  
Condition

Time of discovery	Adenoma	Metastasizing carcinoma
First operation	68	9*
Biopsy (first operation)	9	0
Second operation	5†	0
Necropsy	3	1
Total	85	10
Sex of patients		
Male	33	8
Female	52	2

\*Metastasis to liver found in one case; three previous operations elsewhere with removal of grade-1 adenocarcinoma of the pancreas at initial operation.  
†Adenoma found in one case at fourth operation.

origin in the pancreas revealed that the tumors were distributed fairly equally in the head, body and tail of the pancreas with 4 per cent of the patients having multiple tumors (table 3). If, after careful sectioning, the pathologist fails to find the tumor and if the patient continues to have symptoms, re-exploration is advised. Unfortunately in rare instances it may be necessary to perform total pancreatectomy in order to remove the tumor or tumors. Frequent round-the-clock feedings in combination with radiation therapy or oral administration of glucosteroids or both may be helpful in alleviating hypoglycemic symptoms that may result from functioning metastatic neoplastic tissue. In these patients, however, the ultimate prognosis is invariably poor.

Increasing interest has been directed within recent years toward spontaneous hypoglycemia associated with extrapancreatic tumors. More than two dozen cases of large spindle cell tumors associated with hypoglycemia have been documented.<sup>9,10</sup> Nine instances of adrenocortical carcinoma and one of benign cortical adenoma associated with severe hypoglycemia also have been reported.<sup>9</sup> A review of the clinical and pathologic findings in these cases reveals several unusual features. In most all cases, the tumors have been situated either in the retroperitoneal area or, less frequently, in the thorax. In only one case has it been proved that the pancreas actually may have been the site of origin of the tumor. The large size of the tumors also is noteworthy with the largest tumor reported to weigh 4720 gm. and the smallest, 770 gm., including the tumor and resected kidney. In the reported cases the pathologic diagnoses suggest a certain morphologic similarity relating them to origin from fibrous mesodermal tissue. Included among the

TABLE 3  
Site or Origin in Pancreas of 95 Islet Cell Tumors

Site of Origin	Adenoma	Metastasizing carcinoma	Number	Per Cent
Head	23	1	24	25.3
Body	24	1	25	26.3
Tail	28	3	31	32.6
Junction of body and tail	6	2	8	8.4
Multiple sites	4*	0	4	4.2
Not stated	0	3	3	3.2
Total	85	10	95	100.0

\*Single adenoma removed at first operation and multiple adenomas removed at second operation in one case. Multiple adenomas found at necropsy in one case.

pathologic diagnoses have been fibroma, fibrosarcoma, spindle cell sarcoma and malignant mesothelioma.

NUMEROUS theories have been proposed to explain the mechanism whereby these tumors induce hypoglycemia. The following theories are among those that have been considered: (1) production by the tumor of insulin or insulin-like material, (2) production by the tumor of a substance capable of stimulating the pancreas to produce insulin, (3) increased utilization of carbohydrates by the tumor cells, (4) abnormalities of an insulinase system, (5) production by the tumor of a hypoglycemia-producing substance which is not insulin and does not inhibit insulinase, and (6) co-existing impairment of hepatic function.<sup>11</sup> Skillern and associates<sup>12</sup> were among the first to interpret this group of tumors as representing spindle islet cell carcinomas masquerading as fibrogenic tumors. In neither of their cases, however, was a primary tumor of the pancreas identified. August and Hiatt<sup>13</sup> were able to demonstrate an insulin-like activity equivalent to 600 units of insulin in an extract obtained from a fibrosarcoma weighing 1370 gm. Whitney and Heller<sup>14</sup> have recently reported an increase in the insulin-like activity of the serum in a patient with a large retroperitoneal fibrosarcoma who was experiencing severe episodes of hypoglycemia. After surgical removal of the tumor, the insulin-like activity returned to normal levels. Karsh and associates<sup>10</sup> recently documented findings in a patient with a typical functioning pancreatic islet cell carcinoma in whom the metastatic growth had a typical spindle cell appearance. It is obvious, therefore, that the exact mechanism by which these tumors produce hypoglycemia remains to be clarified. It is conceivable that one or more



of the afore-mentioned factors may be responsible for the hypoglycemia. If surgical removal of the large tumors is technically possible, the patients are invariably relieved of their symptoms of hypoglycemia. Where all of the malignant tissue cannot be resected or when metastasis develops, radiation therapy may be extremely helpful in alleviating symptoms of hypoglycemia as exemplified in the following case.

### Report of Case

A 40-year-old white man was seen at the Mayo Clinic in August, 1955, because of recurrent attacks of mental confusion, diplopia, and staggering gait. Not infrequently he arose in the morning in a state of confusion and with slurring of speech. These symptoms were relieved by eating. One morning he was found in bed in deep coma and shortly thereafter he experienced generalized convulsions. In the hospital, blood sugar values as low as 40 mg. per 100 ml. of blood (Folin-Wu method) with concomitant symptoms were observed. At the time of exploration no islet cell tumor could be palpated in the pancreas or identified by serial studies of the resected tail and body of the pancreas. A large tumor was identified in the region of the left kidney. This, together with the kidney, was removed. The excised tumor, which was composed of spindle cells with numerous mitotic figures, was considered to be a fibrosarcoma. The patient did not have further hypoglycemic symptoms after operation and he tolerated a 72-hour fast without discomfort. In 1956 he underwent partial gastrectomy elsewhere for a bleeding gastric ulcer. No obvious recurrence of the tumor was detected at that time. In the summer of 1959, symptoms of hypoglycemia recurred. Again values for fasting blood sugar were low and concomitant symptoms could be demonstrated. Exploration in January, 1960, revealed metastatic fibrosarcoma with extensive involvement of the right lobe of the liver. Cobalt-60 was administered to the right lobe of the liver. The patient continued to farm. Mild hypoglycemic symptoms were noted only if he missed his meals or late bedtime feeding until the summer of 1963 when severe hypoglycemic symptoms again developed despite frequent feedings. He received additional Co<sup>60</sup> therapy and chemotherapy with moderate amelioration of symptoms.

### Comment

In the differential diagnosis of spontaneous

hypoglycemia, the possibility of functional hypoglycemia must always be considered. In patients with this syndrome, attacks of weakness, hunger, trembling, sweating, and rapid pulse 2 to 4 hours after meals usually develop. The symptoms generally subside spontaneously in 15 to 20 minutes. Attacks do not occur in the early morning hours or before breakfast and symptoms cannot be provoked by the omission of breakfast. Loss of consciousness or convulsions due to hypoglycemia rarely, if ever, have been observed in patients with functional hypoglycemia. Clinically, the symptoms in these patients are not progressive in nature, and the frequency of the attacks often seems to be related to the degree of associated emotional stress and anxiety present in many of these individuals. Conn and Seltzer<sup>15</sup> are of the opinion that the hyperglycemia observed in these patients is due to a hyperresponse of the pancreatic islet cells after the intake of large amounts of glucose. The ability of patients with functional hypoglycemia to tolerate the 72-hour fast is usually within normal limits. Recent studies<sup>5</sup> have not revealed a significant difference in the hypoglycemic response to intravenous administration of tolbutamide in patients with functional hypoglycemia and that in normal subjects. These findings suggest that in borderline clinical cases the differentiation between functional hypoglycemia and functioning insulomas may be resolved by using the intravenous tolbutamide test as a screening procedure before resorting to a 72-hour fast. The distressing symptoms experienced by these patients may be prevented by a program of frequent feedings and a diet high in proteins and low in carbohydrates with adequate fat to maintain caloric requirements.

Spontaneous hypoglycemia also may occur in patients with hypofunction of the pituitary gland and primary adrenal insufficiency as well as in patients with advanced hepatic disease. In most circumstances the history as well as clinical and laboratory findings should enable the physician to make a definitive diagnosis of the underlying disease process that is responsible for the hypoglycemia. In patients with pituitary or adrenal cortical insufficiency, an adequate hormonal replacement program should prevent recurrence of hypoglycemia.

Functioning islet cell tumors may cause hypoglycemia in infants but this infrequently occurs.



## Original Articles

Other conditions such as glycogen storage disease, galactosemia, and idiopathic hypoglycemia must be included in the differential diagnosis of spontaneous hypoglycemia in infants. Preliminary observations<sup>5</sup> indicate that children with idiopathic hypoglycemia tend to have a normal response to tolbutamide given intravenously. These observations have been extended to include patients with leucine-sensitive idiopathic hypoglycemia.

**L**AST, but not least, in any patient with spontaneous hypoglycemia one must always consider the possibility of malingering due to the surreptitious use of insulin. Our experience with these cases emphasizes that in any patient suspected of having hypoglycemia who has a background of emotional instability, has been associated with the nursing profession, or has been responsible for the care of patients with diabetes mellitus, it is important to defer surgical exploration until the possibility of surreptitious

use of insulin has been excluded. In some cases unusual hiding places have been discovered, such as the space between the inner and outer walls of a thermos bottle, the toilet reservoir, mattress covers, pillow cases, light receptacles and window ledges. Many of these patients also have had multiple abdominal operations and surgeons have searched in vain for a functioning islet cell tumor.

Spontaneous hypoglycemia poses an interesting challenge to the diagnostic acumen of the consulting physician, since not infrequently the diagnosis may be masked by the unusual symptom complex presented by the patient. The bizarre cerebral signs and symptoms, and the variability in the clinical manifestations which may be associated with hypoglycemia may obscure the definitive diagnosis for months and even years. A careful clinical history and high index of suspicion are of the utmost importance in arriving at a correct diagnosis.

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Dr. Lynn

# Umbilical Hernia

by

Hugh B. Lynn, M.D.

The author presents a twenty-five year review of umbilical hernia in children of less than six years of age at the Mayo Clinic.

OVER THE years I have had a very warm and kindly feeling toward this simple congenital defect. As an intern on the surgical service, I did my first independent suturing on an umbilical hernia. As a brand new medical officer I was permitted to treat surgically a tiny umbilical hernia with incarcerated omentum. Much later as a junior house officer in pediatric surgery, an umbilical herniorrhaphy was my second solo procedure.

As I advanced to chief resident and subsequently to chief of surgery in a children's hospital I became accustomed to view umbilical hernias with increasing fondness. These were the choice morsels for surgical training which could be given to my junior house staff to encourage and reward them without incurring the poorly concealed wrath and resentment of the more senior residents. In addition, running a pediatric surgical clinic in a university training program led me to embrace umbilical defects for yet another reason. An umbilical hernia is an obvious, though usually asymptomatic, defect which commonly leads either to indirect or more often to direct surgical consultation. This presented an opportunity to examine an infant or small child not just for the umbilical defect but for a multitude of additional conditions amenable to surgical treatment. No umbilical hernia ever passed through my service without a preoperative search for phimosis, inguinal hernias, undescended testes, pilonidal sinus, thyroglossal-duct cysts and branchial-cleft sinuses

of the neck or preauricular area. This is just a partial list of lesions that we enjoyed coupling with our umbilical surgery.

Out of fairness to myself, to my own previous training, and to my own training program, we usually urged delaying operation on isolated umbilical hernias until after the boys attained 18 months of age and the girls reached 1 year of age. This reasoning was based on the fact that boys appear to develop greater abdominal-wall musculature as they grow and ambulate and that girls may anticipate recurrent bouts of abdominal-wall relaxation under the multiple influences of pregnancy.

In addition, I have always been, and still am, a firm advocate of the taping of umbilical protuberances during the first 3 months of life. I believe that the use of any form of stretchable elastic tape which is applied with the skin folded so as to reduce the hernia is worth trying. The use of trusses, coins, overcoat buttons, and so forth has never appealed to me. Aside from skin excoriation when the taping was improperly done either through poor choice of material or failure to change the tape regularly, I have seen only one bad complication. Several years ago a mother called me about a 5-month-old child I had never seen, much less treated. Her story was that the infant was passing urine from his navel. I immediately diagnosed a patent allantoic stalk or urachus, but fortunately circumstances were such that she was able to bring the patient right to the clinic. Inspection of the abdomen showed some tired and soiled adhesive tape running three quarters of the way around the abdomen with a firm disk (50-cent piece) incorporated

Presented at the Arizona Pediatric Society, in conjunction with the 73rd Annual Meeting of The Arizona Medical Association, Inc., May 3, 1963.  
Pediatric Surgeon, Mayo Clinic.



TABLE 1				
Distribution of Patients According to Age at Onset of Umbilical Hernia: Patients With Onset in First Year of Life				
Age at onset, months	Male	Female	Total	Per cent of 431
0- 1	43	40	83	19.3
1- 2	79	71	150	34.7
2- 3	48	36	84	19.4
3- 4	22	14	36	8.4
4- 5	7	2	9	2.1
5- 6	5	6	11	2.6
6- 7	8	5	13	3.0
7- 8	3	5	8	1.9
8- 9	9	4	13	3.0
9-10	5	5	10	2.3
10-11	2	6	8	1.9
11-12	2	4	6	1.4
Total	233	198	431	100.0

in the area over the umbilicus, and clear fluid oozing from under the tape. The dressing was subsequently removed in the operating room under anesthetic relaxation, and there lay a large umbilical hernia with an area of necrotic erosion with perforation. Fortunately the outcome was completely satisfactory.

In spite of this complication and the many unsatisfactory experiences with ordinary adhesive tape, to say nothing of my complete lack of confidence in this as a therapeutic procedure, I continue to demonstrate and instruct parents in this gymnastic maneuver which requires the cooperation of both parents to a degree which no other phase of their child's care demands. In the event that the hernia disappears I am rewarded with the knowledge that the parents know I have done what was wise, safe, and unselfish for their baby. If the hernia persists, I am now dealing with parents willing to resort to "the knife," confident that all else has failed though possibly secretly feeling guilty that they had done the taping only occasionally but confident that it was irritating to the baby's skin as well as to themselves.

AT THIS point in my career, I changed my geographic location and my full-time medical school appointment for a position in a large clinic affiliated with a graduate school. Many aspects of surgery changed, including the type of surgical patients presenting for care. The umbilical hernias were victims of this transition. Inquiry brought to light the fact that my colleagues in the pediatric section rarely consulted a surgeon about an umbilical defect.

After much wistful thought and deliberation I

enlisted the volunteer services of one of my junior house officers in an attempt to learn the fate of these unoperated umbilical defects. Through the facilities of our section of biometry and medical statistics we were able to review the records of all patients less than 6 years of age seen in the pediatric section during a 25-year period (1930 through 1954) on whom a diagnosis of umbilical hernia had been made. The decision to limit the study to patients less than 6 years old was arrived at by doing a small pilot study on all pediatric patients up to age 17 years seen in our clinic during the 3-year period 1950 through 1952. In the pilot study, only nine patients were found in the age group 6 to 17 years with an initial diagnosis of umbilical hernia. All were less than 10 years of age and in only one of the nine had the hernia not been definitely present since the first year of life.

The number of cases of umbilical hernia for the 25-year period totaled 514. Twenty-six of these patients underwent surgical treatment of their umbilical hernias at our institution for various reasons. This left 488 patients with unoperated umbilical hernias to be studied. As a result of persistent efforts, reports were obtained from 417 patients (216 males and 201 females) giving us adequate answers to our lengthy questionnaire. Actually only 44 patients could not be traced and an additional seven had died. Also, 20 refused to answer our questionnaires for various reasons, and in all probability some of these were operated on elsewhere.

THE conclusions drawn from this study are based therefore on an 86 per cent follow-up of all patients originally seen during the 25-year period. The follow-up periods ranged from 6 to 31 years. The patients were divided into two groups: group I consisting of 153 patients now

TABLE 2				
Distribution of Patients According to Age at Onset of Umbilical Hernia: Patients With Onset in First 5 Years of Life*				
Age at onset, years	Male	Female	Total	Per cent of 505
0-1	233	198	431	85.2
1-2	19	26	45	8.9
2-3	8	4	12	2.5
3-4	5	3	8	1.6
4-5	1	0	1	0.2
5-6	2	6	8	1.6
Total	268	237	505	100.0

\*Not included are nine additional cases of hernia found in children 6 years old and older in the 1950 to 1952 pilot study.



TABLE 3  
Results of Nonsurgical Treatment of Umbilical Hernia in Children

Group	Sex	Total patients	Treated patients		Patients with recurrence or persistence			
			Number	Per cent	Treated	Per cent	Untreated	Per cent
I (now 17-31 years old)	Male	82	51	62.2	1	2.0	0	0.0
	Female	71	50	70.4	3*	6.0	1	2.0
II (now 6-17 years old)	Male	134	69	51.5	3†	4.3	3	4.3
	Female	130	61	46.9	0	0.0	2	3.3
Totals		417	231	55.4	7	3.0	6	2.6

\*Includes one patient with hernia of 3 years' duration operated on elsewhere.  
†Includes one patient with hernia of 5 years' duration operated on elsewhere.

17 to 31 years old, and group II consisting of 264 patients now 6 to 17 years. While our largely referral-type practice might argue against our observing an incidence of umbilical hernia typical of private practice, the incidence of 1.5 per cent in our pediatric clinic is very close to that in other series and is constant throughout this series on a year-to-year basis.

The age and sex distribution of these patients can be seen in table 1 for the first year of life and in table 2 for the entire series excluding the nine patients more than 5 years of age encountered in the pilot study. These statistics show only a slight preponderance of males over females in the patients less than 6 years of age at time of onset of hernia.

OF FURTHER interest was the incidence of patients for whom some form of taping was either advocated or employed. Of the entire series of 417 patients followed, 231 or 55.4 per cent were subjected to some nonoperative therapy. Of 13 patients showing persistence or recurrence, seven\* had been treated and six had never had the benefit of such care (table 3). The 11 persisting defects are all asymptomatic and the patients are satisfied not to have an operation.

Prematurity is usually regarded as a predisposing cause of umbilical hernia but this was not confirmed by our study. Of 230 patients with accurate birth weights, only eight (3.5 per cent) weighed less than 5½ pounds at birth. On

the other hand, 31 patients (13.5 per cent) weighed more than 8½ pounds.

Heredity is often looked upon as predisposing factor in umbilical defect. In this series, 38 of 417 patients (9.1 per cent) had a positive family history. Of the 103 married patients with children of their own, 10 reported the presence of umbilical hernias in their offspring, an incidence of 9.7 per cent.

Since the start of my present service 28 months ago, nine patients have been subjected to umbilical herniorrhaphy (table 4). This represents about three or four cases per year and approximately one operation per 35 patients with some degree of umbilical herniation seen at our clinic at the present time.

Conclusions

Probably no firm or binding conclusions can be drawn from such a study as this, because of the infinite number of variables. However, it would seem that umbilical hernias, usually asymptomatic, almost always appear within the first year of life and very rarely appear for the first time after 5 years of age. The natural tendency is to gradual obliteration and in almost all cases the defect disappears by 10 years of age.

Taping of such defects continues to be a part of the art of the practice of medicine. While there is no statistical evidence that this therapy in any way influences the disappearance of the hernia, it seems to be a logical form of care since much may be gained and very little lost by the judicious use of elastic taping during the early weeks of life.

Although operation is rarely required for actual physical symptoms, the anxiety of parents over imagined hazards and the cosmetic appearance in the young child may be as important as the physical symptoms. Certainly these factors must be weighed every bit as carefully as the natural history of gradual obliteration of this defect as brought out by this study.

TABLE 4  
Nine Patients With Umbilical Hernia Operated on by Author From January, 1961, to May, 1963

Age, mo.	Male	Female	Total
2	2*	1†	3
5	1	0	1
12	1	1	2
20	1	0	1
24	1	1	2
Total	6	3	9

\*One also had repair of bilateral inguinal hernias.  
†One also had liver biopsy and operative cholangiography for biliary atresia.

\*Two patients underwent operation elsewhere after 3 and 5 years' duration of hernia.



# Incidence Of Side Effects With Kynex Sulfamethoxypyridazine

by

Donald B. Frazier, M.D.



Dr. Frazier

Sulfamethoxypyridazine is a sulfonamide capable of producing therapeutic blood levels on low dosage schedules. In a study of 244 hospitalized patients receiving this drug, 3.2 per cent exhibited side effects. Rash, fever, nausea and headache were the most frequently observed. No serious drug toxicity was noted in this study.

**K**YNEX Sulfamethoxypyridazine is a long acting sulfonamide<sup>1</sup>. It is capable of producing and maintaining therapeutic plasma levels on low dosage schedules.<sup>1,2,3</sup>

This drug has been used for several years at the San Diego County General Hospital because of satisfactory results, ease of administration (one tablet daily) and cost comparable to other sulfonamide preparations. This is a report of a clinical study carried out to determine the incidence of side effects attributable to Kynex.

## Method

The patients studied were those hospitalized on the Male Urology Service during the year 1960. This group was selected because a high percentage of patients admitted to this Service required sulfonamide therapy and close observation by the nursing staff was possible.

The nurses were informed in writing which of the side effects known to occur with sulfonamide therapy might be observed by them. Ward rounds were made twice daily by the Resident Staff. Routine blood counts were obtained on all patients.

The patients selected for Kynex therapy were given the recommended dose of 500 mgm. daily. 244 patients were studied and the duration of therapy ranged from 1 to 42 days for a total of 2,132 patient-days of Kynex therapy. The average length of treatment was 9 days.

## Results

Seven, or 3.2% of the 244 patients treated, exhibited side effects. Five of these were erythematous morbilliform rashes, 1 was drug fever (101°), and 1 was nausea. Onset of the side effect occurred within 24 hours after the start of Kynex in 3 patients and in from 3 to 11 days after the

1150 North Country Club Drive, Mesa, Arizona.



start of Kynex in the others. The average duration of therapy before the onset of side effects was 2.3 days.

One patient who developed a rash after 3 days of Kynex was started on the drug again a week later and took it 35 days without side effects.

All rashes cleared promptly on discontinuance of the drug and administration of an antihistamine preparation. Steroid therapy was not found to be necessary. The drug fever and nausea were gone the day after Kynex was stopped. No side effects of serious nature were observed.

### Discussion

Side effects generally observed due to the administration of sulfonamide preparations are rash, fever, nausea, headache, leukopenia, hematuria and anaphylaxis. Those most commonly seen are rash, fever, nausea and headache.

No anaphylaxis was observed in the group studied at the San Diego County General Hospital. Routine blood counts failed to disclose any case of leukopenia during the study. The presence or absence of hematuria could not be evaluated since many of the patients studied also had urological instrumentation and surgery.

### Summary

A study to determine the incidence of side effects due to Kynex Sulfamethoxypyridazine has been carried out at the San Diego County General Hospital. Of the 244 patients placed on Kynex, 7 or 3.2% developed side effects, none of which was of serious nature. This compares favorably with the incidence of side effects due to other sulfonamides.<sup>4,5,6</sup>

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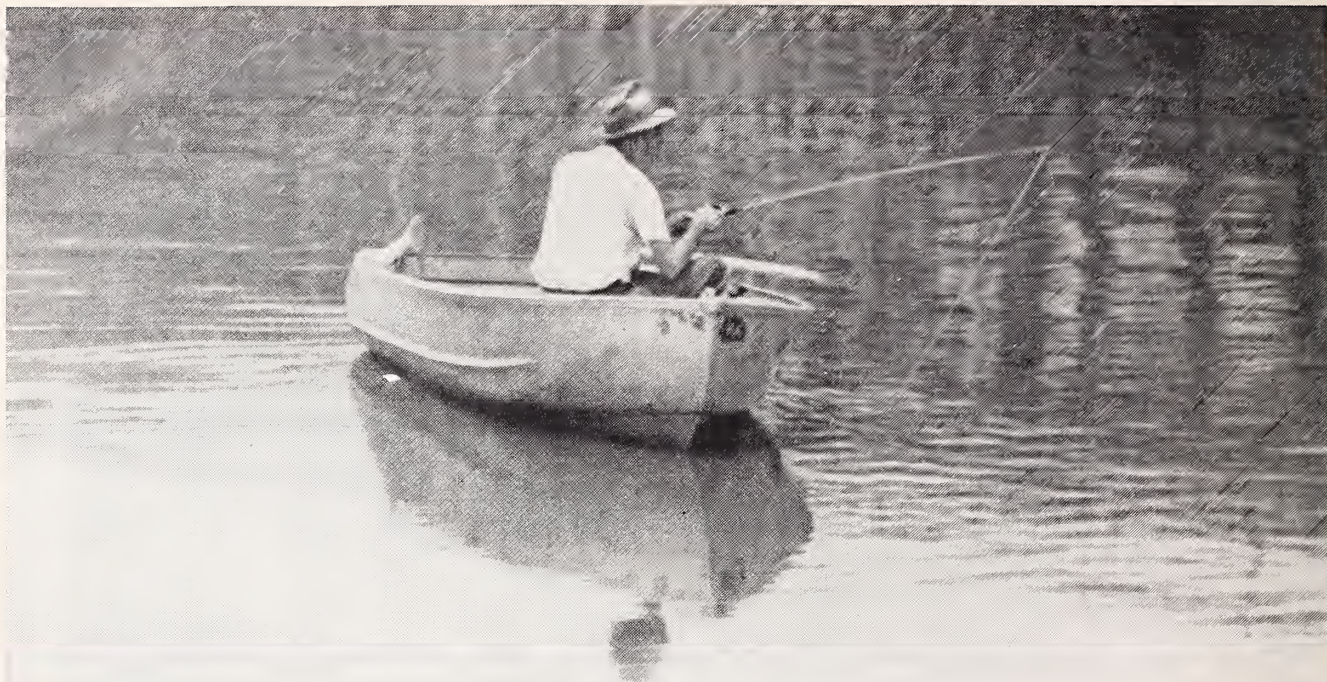
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*"The average practitioner is quite capable of handling the vast majority of ex-institutionalized patients by regulation of medication, reassurance, manipulation of the environment where necessary, and . . . other technics."* Kline, N.S.: Postgrad. Med. 27:620 (May) 1960.

The family physician must often assume responsibility for the discharged mental patient. Thorazine (chlorpromazine, SK&F) can be a valuable adjunct to the continuing care of this patient, because it helps prevent relapses by insulating him from the impact of stressful experiences. For successful rehabilitation and prevention of rehospitalization, however, the former mental patient—and often his family—also needs the guidance and counsel of his physician.

Many physicians are surprised by the high doses of Thorazine (chlorpromazine, SK&F) used in patients released to their care from mental hospitals. This surprise may be expressed by a drastic reduction in dosage "to play it safe"—with serious consequences for the patient.

The successful maintenance of former mental patients requires adequate, often "high" dosage, and often for prolonged periods of time. Fortunately, these dosages do not mean greater risks for the

patient. On the contrary, there is much less risk of serious side effects once a patient has become gradually accustomed to Thorazine (chlorpromazine, SK&F)—*regardless of dosage*—over a period of a few months. Continuing therapy is almost always well tolerated, and is essential to most patients' continued well-being.

**Brief Summary:** Thorazine (chlorpromazine, SK&F) has been successfully used for 10 years in the treatment of mental and emotional disturbances, and has proven highly effective in the maintenance therapy of former hospitalized mental patients. **Principal side effects:** The most frequently encountered side effect is transitory drowsiness. Other occasional side effects include: dry mouth, nasal congestion, constipation, miosis, dermatological reactions, photosensitivity, jaundice, hypotension, increased appetite and weight; very rarely, mydriasis, agranulocytosis, extrapyramidal symptoms. **Contraindications:** Comatose states or in the presence of excessive amounts of C.N.S. depressants.

For complete prescribing information, please see *PDR* or available literature.



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William B. Steen, M.D.

ANOTHER year of state activity is about ended and I want to thank all of the doctors of the State Medical Society for their cooperation and help for a most successful year. You represent the component medical societies with their active county organizations.

Our state organization with its House of

Delegates, Board of Directors, the State Officers, and committee chairmen and committee members are part of this active complex. Our dedicated and loyal staff in our Central Office with our Legal Counsel certainly act as a catalyst in our nerve center at Scottsdale and have our grateful thanks for helping to keep the show on the road.

At the time of our organizational meeting with the appointment of committees and chairmen to pilot their course, momentum began to develop for the year. Our Scientific Assembly Committee barely had time to point its thinking toward Chandler. We were suddenly confronted with several important problems.

The highlights for the year, around which a great deal of thought, effort and downright work was expended, were first, the Operation Hometown Program and second, our Legislative Program.

Certainly the doctors and their wives of Arizona should be, and justifiably so, complimented on their fine work throughout the state for Operation Hometown. Every effort was made to create a climate opposed to HR 3920, the new King-Anderson Bill, so that our citizens would let their Congressmen know that all of the people in Arizona were opposed to this federal legislation for Social Security financed medical care for the aged. Likewise, we want Congress to know that they are opposed to any of these federally sponsored medical health proposals.

Another highlight was the Legislative Program. Much planning with the Legislative Committee spearheading the efforts of our Board of Directors, the Central Office, our Counsel and many of our doctors and their wives was involved in a statewide cooperative effort. We

had at stake a new Medical Practice Act, an amendment to the Basic Science Law, and a Kerr-Mills Implementation Bill. At the time of writing, the first two bills had cleared the Legislature and been signed by the governor. The fate of the very important Kerr-Mills Implementation Bill is unknown at this time. The most encouraging single thing about this effort has been the genuine, wholehearted support of so many doctors and their wives throughout the state who will be responsible for whatever success we may have.

CERTAINLY we rejoice with the progress being made to develop a College of Medicine at the University of Arizona. The new Dean, Dr. Merlin K. DuVal, Jr., has met many of the doctors in the state and will be on the program at the annual meeting. His scientific stature is well known and he is exhibiting a fine example of leadership during this period of development. Opportunity is provided for doctors throughout the state to actively participate in this period of development through F.A.M.E. (The Founders for Arizona Medical Education). This reference to the medical school brings up the subject of loans to students, which has been sponsored by your State Medical Society.

The American Medical Association Education and Research Foundation (AMAERF) also is active in a 5-point program which includes loans to students and monies for unrestricted use for medical schools through funds from doctors and private sources. Possibly we should re-examine our stand on this problem with definite thinking toward our own medical school.

Many other facets in our overall picture demand our attention and we must give them consideration. We need and must have a strong AMA and a strong ArMA. They are our first line of defense at the national and state levels. The basis of keeping these healthy, is a strong, vigorous county society. That is the job for every one of us.

Our doctors need to be dedicated individuals who take care of the sick with a personal touch, and counsel with the family. They need to be active as leaders in their communities and join with the clergy in the total care of the patient.

DURING the year I have had no time to discuss the subject of the health team, the doctor, nurse and the hospital, with all the various



## President's Page

associated ancillary groups. The new medical school will help to furnish an adequate number of doctors for the state of Arizona. Nurses are reported to be deficient in number. In addition to our already existing nurses' school, ways and means need to be found to increase their numbers. Efforts are being made to increase the number of our licensed practical nurses and aides. Hospital beds are a controversial subject in regard to need, and in regard to the construction of new ones. Concepts of nursing and hospital procedures, and especially the timing of the solution of these problems, are going through drastic changes at the present time. (The concept of progressive care from intensive through chronic long time care.) All of these problems need to be re-examined, especially the integra-

tion of the convalescent and geriatric centers into the whole.

Our state Blue Shield is reoriented under new leadership, and we wish them every success.

Closing this letter, I again want to thank all the doctors of the state, the state Central Office and our Counsel for their wonderful cooperation and help throughout the year. May this dedicated support from the doctors and their wives continue to make organized medicine more able to give the best possible medicine to our Arizona citizens.

William B. Steen, M.D.  
President

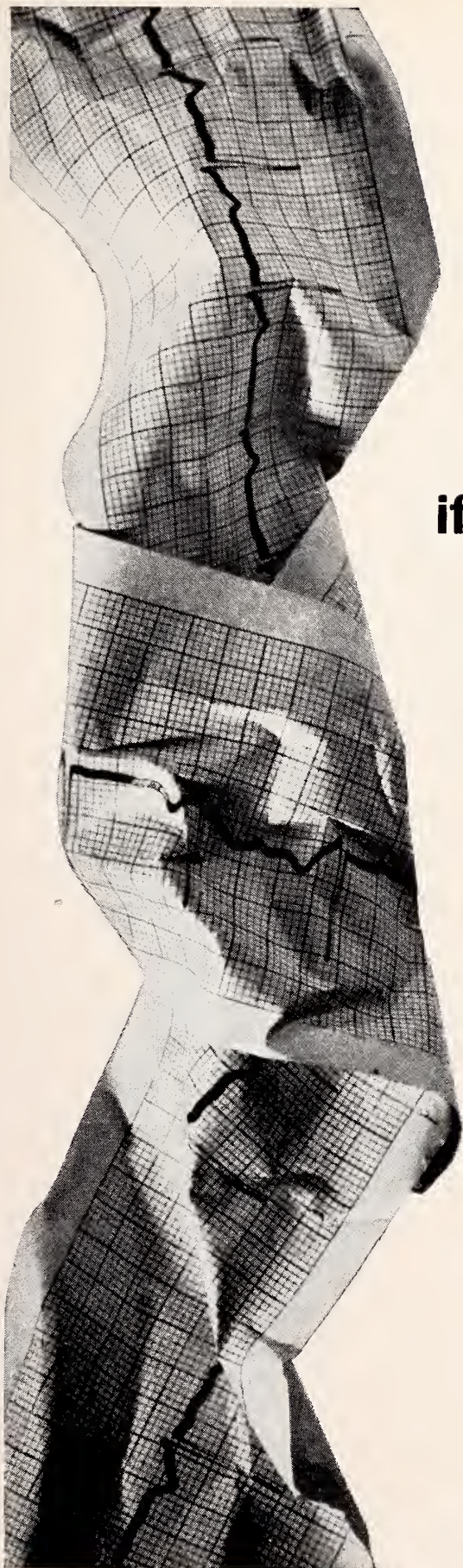
*Ed. note — Grateful appreciation is extended to Doctor Steen for his monthly comments during his tenure as President of ArMA.*



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**Con-ven'tion** (kŏn-vĕn'shun), n. 1. Act of convening. 2. A body of delegates, representatives, members, or the like, periodically convened for a common purpose.

This introduction reminds us that “delegates, representatives, members, or the like,” among physicians of Arizona have the opportunity to convene soon in Chandler at the historic San Marcos Hotel, the first important resort hotel in this area.

Our state meeting is an important meeting. As the medical community of Arizona grows and matures it becomes more significant. The scientific advances and socio-economic forces affecting our patient’s care require our informed attention. The physicians of this state can only exert their rightful influence as an organized

body if the members openly support and actively assist the state society.

Many other national organizations and specialty societies demand our attention and may be more important for their abstract scientific content. Our state society, however, offers broader influence on the professional, social, and human spheres of our lives; and contact with our colleagues from various parts of the state makes us better citizens of our community.

We look forward to seeing you in Chandler!

Robert F. Lorenzen, M.D.  
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	AGE OF INSURED (NEAREST BIRTHDAY)	SINGLE PREMIUM \$25,000 POLICY	YOU SAVE WITH H B A  ↓	SINGLE PREMIUM \$100,000 POLICY	YOU SAVE WITH H B A  ↓
<b>HBA</b>	35 50	\$10,171.25 \$14,029.75		\$40,595.00 \$56,029.00	
Company "N"	35 50	\$14,763.50 \$18,502.50	\$4,592.25 \$4,472.75	\$59,054.00 \$74,010.00	\$18,459.00 \$17,981.00
Company "M"	35 50	\$14,198.50 \$17,788.25	\$4,027.25 \$3,758.50	\$56,794.00 \$71,153.00	\$16,199.00 \$15,124.00
Company "NY"	35 50	\$13,730.75 \$17,466.75	\$3,559.50 \$3,437.00	\$54,923.00 \$69,867.00	\$14,328.00 \$13,838.00
Company "E"	35 50	\$13,507.00 \$17,482.25	\$3,335.75 \$3,452.50	\$54,028.00 \$69,929.00	\$13,433.00 \$13,900.00

A single premium policy is one paid for in a lump sum. ONLY the HBA Single Premium Policy has a cash and loan value and a cash surrender value which is *equal* to the amount of the premium at the end of the first year. For example, if you surrender your policy after the first year, YOU LOSE NOTHING... you get back as much as you paid in.

Yes, Doctor, there IS a difference in life insurance. If you would like a complete listing of comparative life insurance single premium rates contact your nearest HBA Life Insurance Company office.

PEOPLE EXPECT MORE FROM



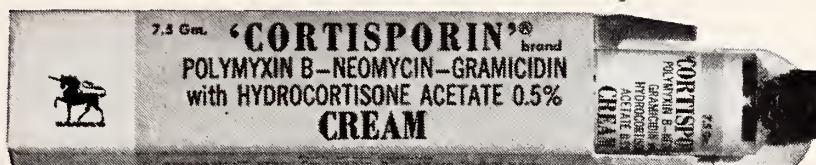
— AND THEY GET IT, TOO!

## THE HBA LIFE INSURANCE COMPANY

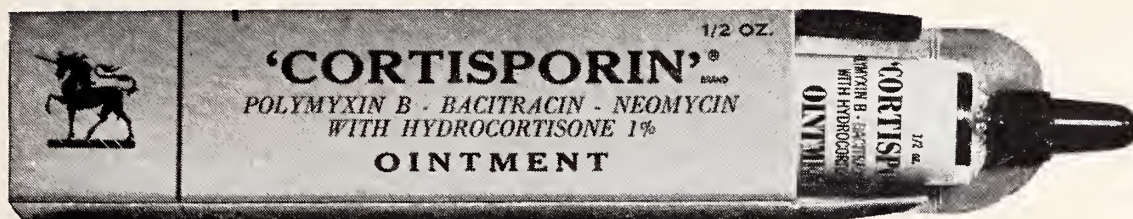
HOME OFFICE: FIRST ST. AT WILLETTA • PHOENIX, ARIZONA



# CHOOSE THE PRODUCT TO FIT THE NEED



a new vanishing cream base



a special low melting point base

anti-inflammatory  
bactericidal  
antipruritic  
rarely sensitizing

**CREAM—Ingredients:** Each gram contains 'Aerosporin'® brand Polymyxin B\* Sulfate 10,000 Units; Neomycin Sulfate (equivalent to 3.5 mg. Neomycin Base) 5.0 mg.; Gramicidin 0.25 mg.; Hydrocortisone Acetate 5.0 mg. (0.5%).

In a smooth, white, water-washable vanishing cream base with a pH of approximately 5.0. Inactive ingredients: liquid petrolatum, white petrolatum, propylene glycol, polyoxyethylene polyoxypropylene compound, emulsifying wax, distilled water, and 0.25% methylparaben as preservative.

**Available:** In tubes of 7.5 Grams.

**OINTMENT—Ingredients:** Each gram contains 'Aerosporin'® brand Polymyxin B\* Sulfate 5,000 Units; Zinc Bacitracin 500 Units; Neomycin Sulfate 5 mg. (equivalent to 3.5 mg. Neomycin Base); Hydrocortisone 10 mg. (1%).

In a special white petrolatum base.

**Available:** In tubes of ½ oz. and ⅓ oz.

\*U.S. Patent Nos. 2,565,057—2,695,261

**Indications:** Wherever inflammation or infection occurs and is accessible for topical therapy.

**Contraindications:** These drugs are contraindicated in tuberculous, fungal or viral lesions (herpes simplex, vaccinia and varicella).

**Caution:** As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.



Complete literature available on request from Professional Services Dept. PML.  
**BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.**

Visit our Booth No. 51 at the Annual Meeting





# **TRAUMA!**

**relieves  
pain  
and  
relaxes  
muscle**

Following traumatic injury, patient comfort can be increased and recovery time shortened by the simultaneous treatment of both pain and muscle spasm with 'Soma' Compound.

## **Soma® Compound**

carisoprodol 200 mg., acetophenetidin 160 mg., caffeine 32 mg.

Also available with ¼ gr. codeine as **SOMA® COMPOUND WITH CODEINE**: carisoprodol 200 mg., acetophenetidin 160 mg., caffeine 32 mg., codeine phosphate 16 mg. (Warning: may be habit forming).



**WALLACE LABORATORIES** / Cranbury, N.J.

**Side effects:** Although there has been no evidence of tolerance, withdrawal symptoms or excessive self-medication, 'Soma' Compound and 'Soma' Compound with Codeine, like other central nervous system depressants, should be used with caution in addiction-prone individuals. While codeine addiction is relatively rare and easily broken, the same precautions must be observed as for any other opium alkaloid. Nausea, vomiting, constipation and miosis are possible codeine side effects. Should symptoms of hypersensitivity occur, discontinue medication.

**Contraindications:** None reported.

**Complete product information available in the product package, and to physicians upon request.**

**Dosage:** Usual dosage is 1 or 2 tablets 4 times daily.

**Supplied:** 'Soma' Compound is available in orange, scored tablets; bottles of 50. 'Soma' Compound with Codeine (narcotic order form required) is available in white, lozenge-shaped tablets; bottles of 50.

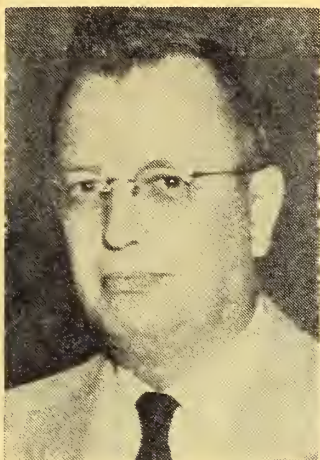


1963 - 64

Association Officers &  
Board of  
Directors



Dr. William B. Steen  
*President*



Dr. W. Albert Brewer  
*President-Elect*



Dr. James E. O'Hare  
*Vice-President*



Dr. C. E. Henderson  
*Secretary*



Dr. A. V. Dudley Jr.  
*Treasurer*

## 3rd ANNUAL MEETING

THE ARIZONA MEDICAL ASSOCIATION, INC.

APRIL 28, 29, 30 — MAY 1, 2, 1964

San Marcos Hotel, Chandler, Arizona

**SCIENTIFIC SESSIONS —**

7 Outstanding Guest Speakers

**EXHIBITS —**

Over 50 Commercial and Scientific Displays

**SOCIAL ACTIVITIES —**

Big doings every day

**REGISTRATION —**

Daily starting at 7:30 a.m. Tickets for all ArMA sponsored functions may be obtained at the Registration Desk.

**HOBBY SHOW —**

This year the Woman's Auxiliary is again sponsoring their popular Hobby Show. Open daily in the LaBoutique Room for your enjoyment.

**MESSAGE CENTER —**

Will be available for your emergency calls.

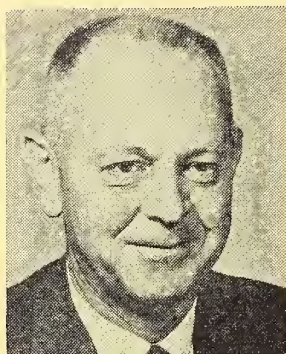
**EXHIBIT ATTENDANCE AWARDS —**

25 pair of tickets to the ASU vs. UofA football game.



## District Directors

### CENTRAL DISTRICT



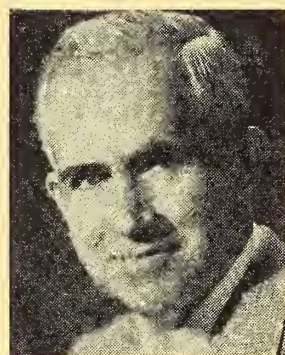
Dr. John A. Eisenbeiss  
*Phoenix*



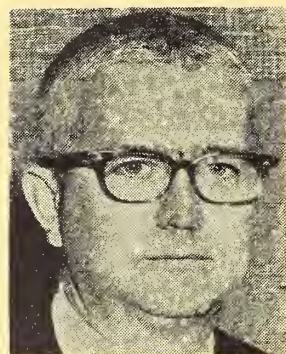
Dr. Richard O. Flynn  
*Tempe*



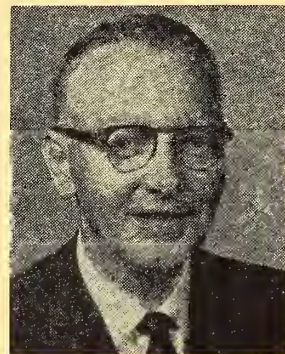
Dr. Paul B. Jarrett  
*Phoenix*



Dr. Robert A. Price  
*Phoenix*

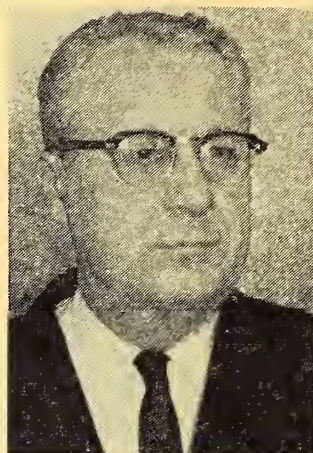


Dr. Noel G. Smith  
*Phoenix*



Dr. Ashton B. Taylor  
*Phoenix*

### NORTHWESTERN AND NORTHEASTERN DISTRICTS

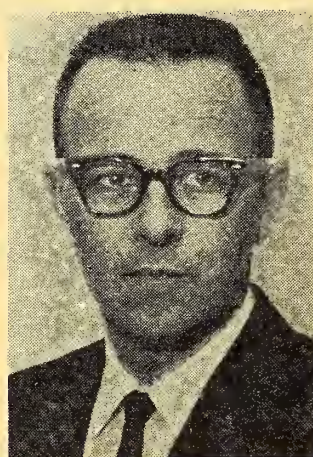


Dr. A. H. Dysterheft  
*Northeastern District*



Dr. J. P. McNally  
*Northwestern District*

### SOUTHWESTERN AND SOUTHEASTERN DISTRICTS

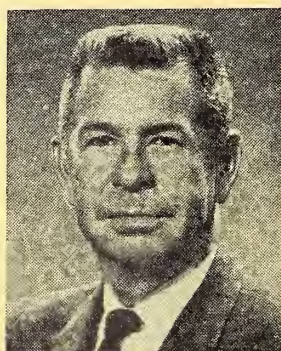


Dr. Thomas W. Jensen  
*Southeastern District*

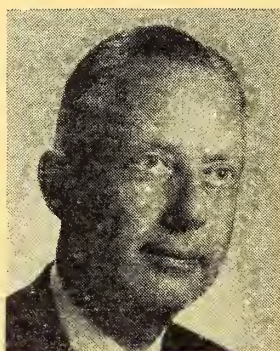


Dr. Howard W. Finke  
*Southwestern District*

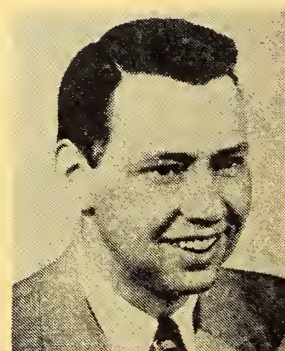
### SOUTHERN DISTRICT



Dr. Earl R. Baldwin  
*Tucson*



Dr. P. G. Derickson  
*Tucson*



Dr. Hermann S. Rhu  
*Tucson*



## 73rd Annual Meeting

Your Central Office is in the U.R. Building across from Fashion Square in Scottsdale adjacent to the Safari Hotel. Stop and say "hello" when passing by.



**Dr. Walter Brazie**  
*Speaker of the House*



**Dr. C. E. Yount Jr.**  
*Past President*



**Mr. Robert Carpenter**  
*Executive Secretary*

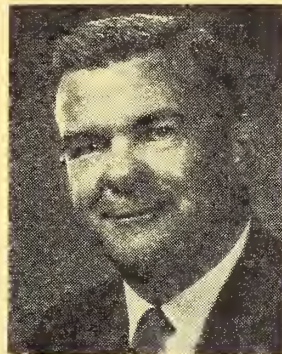
The office is capably administered by Mr. Robert Carpenter, Executive Secretary of ArMA for over 13 years.



**Dr. Lindsay E. Beaton**  
*Delegate to AMA*



**Dr. Dermont W. Melick**  
*Delegate to AMA*



**Paul**

Paul Boykin, known to the staff as M.O.B., has served for eight years as the Assistant Executive Secretary.

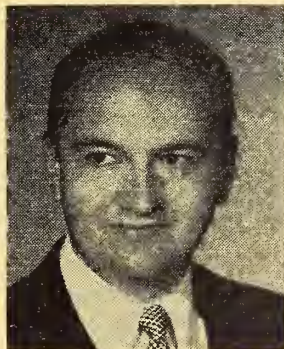


**Bruce**

Bruce E. Robinson, newest member of the executive staff (from Alaska yet) has an excellent future in serving ArMA.



**Dr. A. H. Dysterheft**  
*Alternate Delegate to AMA*



**Dr. D. T. Cloud, Jr.**  
*Alternate Delegate to AMA*



**Dr. Robert F. Lorenzen**  
*Editor-in-Chief*

Noreen Bunyun is Paul's secretary and she is now in her sixth year with the Association.

Ken Cramer is our bookkeeper having joined us a year ago. After spending most of his life in Colorado, he says it's not cold in Arizona!

Fran Holden is our receptionist. She is a transplanted New Yorker who just recently came to Arizona.

Another new staff member is Mr. Carpenter's secretary, Nancy Lefevre. Nancy is also a migrant from the east and, like Ken and Fran, is attending her first Annual Meeting.

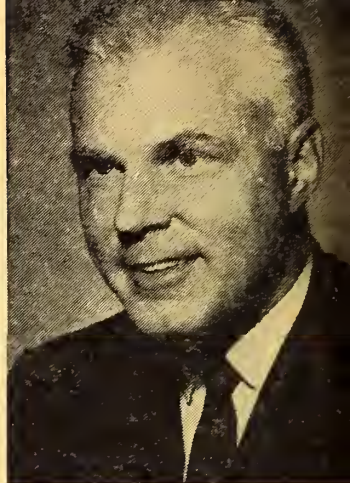
Judy Wellington is the editorial assistant for Arizona Medicine.

You'll meet them all during the Annual Meeting and we know they will individually, or as a group, do all possible to assist you in making your meeting more enjoyable.



## 73rd Annual Meeting

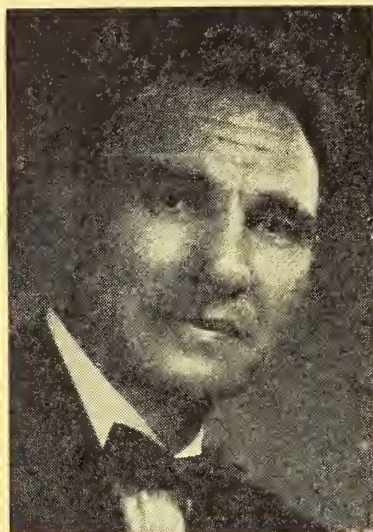
### Guest Speakers



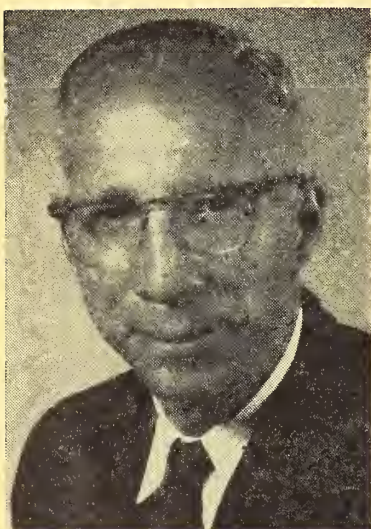
**Merlin K. DuVal, Jr., M.D.**  
*Dean, College of Medicine  
University of Arizona  
Tucson, Arizona*



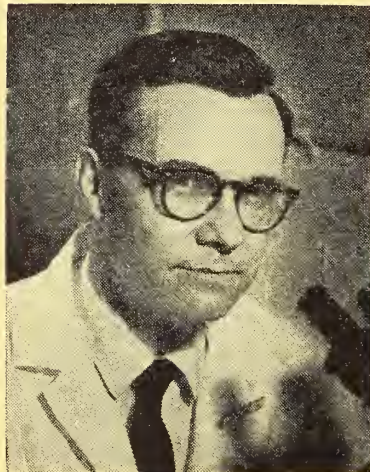
**James D. Hardy, M.D.**  
*Professor & Chairman  
Department of Surgery  
University of Mississippi  
Medical Center  
Jackson, Mississippi*



**Joseph Harris, Ph.D.**  
*Chief,  
Laboratory of Neurochemistry  
Barrow Neurological Institute  
Phoenix, Arizona*



**Willem J. Kolff, M.D.**  
*Department of Artificial Organs  
Cleveland Clinic  
Cleveland, Ohio*



**Orlando J. Miller, M.D.**  
*Department of Obstetrics  
& Gynecology  
College of Physicians  
& Surgeons  
Columbia University  
New York, New York*



**William R. Waddell, M.D.**  
*Professor & Chairman  
Department of Surgery  
University of Colorado  
Denver, Colorado*



**Harry A. Waisman, M.D.**  
*Professor of Pediatrics  
University of Wisconsin  
University Hospitals  
Madison, Wisconsin*



THE ARIZONA MEDICAL ASSOCIATION, INC.

73rd ANNUAL MEETING

April 28 - May 2, 1964

San Marcos Hotel Chandler, Arizona

*Official Program*

**TUESDAY, APRIL 28:**

- 3:00 p.m. Blue Shield Annual Corporation Meeting .....Garden Room  
First Session
- 7:00 p.m. Board of Directors Dinner .....Arcade Room
- 8:00 p.m. Board of Directors Meeting .....Terrace Lounge

**WEDNESDAY, APRIL 29:**

- 9:00 a.m. House of Delegates — First Session .....Garden Room West
- 11:00 a.m. Blue Shield Corporation Meeting .....Garden Room  
Second Session
- 2:00 p.m. Reference Committees — Subject to Call .....Suites 2 and 106

**THURSDAY, APRIL 30:**

- 7:00 a.m. Buffet Breakfast — Panel Discussion .....Garden Room East  
(Admission by Ticket Only)  
“Chromosomal Aberrations”  
William M. Hindman, M.D. .... Moderator  
Joseph Harris, Ph.D. .... Discussant  
Orlando J. Miller, M.D. .... Discussant  
Harry A. Waisman, M.D. .... Discussant
- 9:30 a.m. Intermission .....Visit the Exhibits
- 10:00 a.m. Opening Exercises .....Garden Room West  
Call to Order  
William B. Steen, M.D., President  
Invocation and Memorial Service  
The Reverend Charles Ehrhardt, Pastor  
The First Presbyterian Church  
Welcome  
Wallace A. Reed, M.D., President  
Maricopa County Medical Society  
Response  
Harry C. Smith, M.D., President  
Coehise County Medical Society  
Introduction of Distinguished Guests  
Introduction of the Incoming President  
William B. Steen, M.D.  
Presidential Address  
W. Albert Brewer, M.D.
- 11:15 a.m. Intermission .....Visit the Exhibits
- 11:45 a.m. Scientific Session .....Garden Room West  
“Immunologic Considerations in Organ Transplantations”  
James D. Hardy, M.D., Jackson, Mississippi  
Richard L. Dexter, M.D., Moderator



## 73rd Annual Meeting

### FRIDAY, MAY 1:

<b>7:15 a.m.</b>	Breakfast Seminar .....Garden Room East (Admission by Ticket Only) "Basic Concepts in Tissue Transplantations" James D. Barger, M.D. .... Moderator James D. Hardy, M.D. .... Discussant Willem J. Kolff, M.D. .... Discussant William R. Waddell, M.D. .... Discussant
<b>9:30 a.m.</b>	Intermission .....Visit the Exhibits
<b>10:00 a.m.</b>	Scientific Session .....Garden Room West "Inborn Errors of Metabolism — The Concept and the Practice" Harry A. Waisman, M.D., Madison, Wisconsin Richard B. Johns, M.D., Moderator
<b>10:30 a.m.</b>	"Chromosomal Aberrations in Cancer" Orlando J. Miller, M.D., New York, New York Edward Sattenspiel, M.D., Moderator
<b>11:00 a.m.</b>	"Transplantation of the Lung and Heart" James D. Hardy, M.D., Jackson, Mississippi William W. McKinley, Jr., M.D., Moderator
<b>11:30 a.m.</b>	"To Live Without Kidneys: Treatment of Acute Renal Failure, Treatment of Chronic Renal Failure, Kidney Transplantation" Willem J. Kolff, M.D., Cleveland, Ohio Kenneth E. Johnson, M.D., Moderator
<b>12:00 Noon</b>	"Clinical Results of Renal Transplantations" William R. Waddell, M.D., Denver, Colorado John F. Currin, M.D., Moderator
<b>3:00 p.m.</b>	House of Delegates — Second Session .....Garden Room West

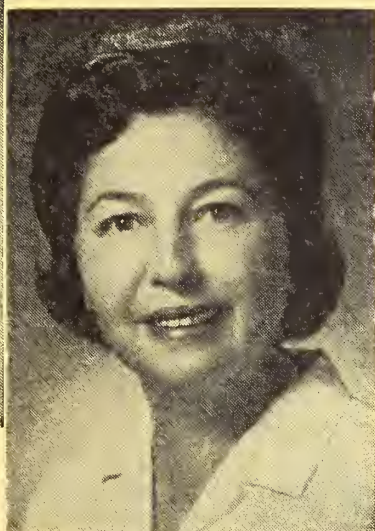
### SATURDAY, MAY 2:

<b>8:45 a.m.</b>	Scientific Session .....Garden Room West "To Live Without Hearts: Total Replacement of the Natural Heart by a Mechanical Substitute" Willem J. Kolff, M.D., Cleveland, Ohio Charles W. McMoran, M.D., Moderator
<b>9:15 a.m.</b>	"Failure to Thrive" Harry A. Waisman, M.D., Madison, Wisconsin Brick P. Storts, Jr., M.D., Moderator
<b>9:45 a.m.</b>	"Spontaneous Abortions" Orlando J. Miller, M.D., New York, New York Martin Cohen, M.D., Moderator
<b>10:15 a.m.</b>	Intermission .....Visit the Exhibits
<b>10:45 a.m.</b>	"The Problems of Hepatic Transplantations" William R. Waddell, M.D., Denver, Colorado Frederick W. Knight, M.D., Moderator
<b>11:15 a.m.</b>	"The Role of Micromolecules in Learning and Memory" Joseph Harris, Ph.D., Phoenix, Arizona T. Richard Gregory, M.D., Moderator
<b>11:45 a.m.</b>	"Medical Education in Arizona" Merlin K. DuVal, Jr., M.D., Tucson, Arizona Joseph M. Greer, M.D., Moderator
<b>12:15 p.m.</b>	Adjournment of the 73rd Annual Meeting





Mrs. Clare W. Johnson  
*President*



Mrs. Richard B. Johns  
*President-Elect*

# 34th Annual Meeting WOMAN'S AUXILIARY

to the  
**Arizona Medical  
Association**

**34th Annual Meeting  
April 29 - May 1, 1964**

**San Marcos Hotel  
Chandler, Arizona**

## *Official Program*

General Chairman, Mrs. John E. Schramel  
Co-Chairman, Mrs. Thomas B. Jarvis  
Honorary Chairman, Mrs. W. Albert Brewer  
Hostess Auxiliary: Maricopa County

### WEDNESDAY, APRIL 29:

8:30 a.m.	Registration .....	Lobby
9:00 a.m.	Student Nurse Loan Committee Meeting	
2:00 p.m.	Nominating Committee Meeting Finance Committee Meeting	
2:30 p.m.	Pre-Convention State Board Meeting .....	Lodge
	Hobby Exhibit .....	LaBoutique Room
	Coffee .....	Lobby

### THURSDAY, APRIL 30:

9:00 a.m.	Registration .....	Lobby
	Continental Breakfast .....	Lodge
10:00 a.m.	First General Session .....	Lodge
	Welcome — Mrs. John E. Schramel, Convention Chairman	
	Standing Committee Reports	
	Nominating Committee Reports	
	Election of Officers	
	In Memorium	
12:00 Noon	Recess of First General Session	
12:15 p.m.	Informal Dutch Treat Luncheon & Dick Smith's Swim Revue .....	Poolside

### FRIDAY, MAY 1:

9:00 a.m.	Registration .....	Lobby
10:30 a.m.	Second General Session .....	Lodge
	President's Report	
	County President's Reports	
12:30 p.m.	Annual Luncheon .....	Club House
	Address — Mrs. G. Prentiss Lee, Western Regional Vice President, Woman's Auxiliary to the American Medical Association	
	Installation of Officers	
	Acceptance — Mrs. Richard B. Johns	
	Adjournment	
	New Executive Board Meeting	
	Post-Convention Board Meeting	

*Members of the Woman's Auxiliary are welcome to attend the breakfast panel discussions and the scientific sessions of the Annual Meeting of ArMA.*



# *Come on 'n Socialize*

## **WEDNESDAY, APRIL 29:**

- 7:00 p.m.** Reception and Luau at Poolside  
Come comfy and casual in your Muu Muu, Bermudas, Grass Skirts, Shifts or Surfers. Ernie Menehune Revue for your entertainment and dancing. You can hula, too!

## **THURSDAY, APRIL 30:**

- 12:30 p.m.** Dick Smith's Swim Revue at Poolside
- 1-3 p.m.** Specialty Group Luncheons  
Open to all registrants and their wives
- 1:00 p.m.** Annual Handicap Golf Tournament — San Marcos Golf Club
- 2:00 p.m.** Annual Bowling Tournament — Ranch Lanes
- 7:00 p.m.** Reception and Shore Dinner at the Clubhouse with the Desert City Six playing Dixieland to keep you on your toes while you Charleston and do the Black Bottom. Dig out your 'Roaring Twenties' garb!

## **FRIDAY, MAY 1:**

- 1-3 p.m.** Specialty Group Luncheons
- 7:30 p.m.** Reception at Poolside followed by President's Dinner Dance in the Garden Room. Tiny Fortman and his Band will provide music for dancing.

## **SATURDAY, MAY 2:**

- After** Home to sleep! We want you rested and ready for the 74th Annual  
**12:15 p.m.** Meeting at the Pioneer International in Tucson.





*The casual atmosphere* of Camelback Hospital  
 is one of relaxed Western living.  
 Looking east, Camelback Mountain provides the background  
 for the lovely lawn and grove area.  
 The natural beauty of the surroundings at Camelback Hospital  
 creates, for the patient,  
 a restful, scenic setting.

## Camelback Hospital

5055 North 34th Street  
 AMherst 4-4111  
 PHOENIX, ARIZONA

ARIZONA FOUNDATION FOR NEUROLOGY AND PSYCHIATRY  
 A Non-Profit Corporation

Located in the heart of the beautiful Phoenix citrus area  
 near picturesque Camelback Mountain, the hospital is  
 dedicated exclusively to the treatment of psychiatric  
 and psychosomatic disorders, including alcoholism.



# RECOGNIZE THIS PATIENT?



“ I don't sleep well . . . I dream a lot . . .  
wake up tired and irritable. I don't have  
any appetite . . . I'll never be cured.”



**When you recognize signs of depression and anxiety and associate them with an organic condition—add 'Deprol' to your therapy.**

*Typical conditions in which 'Deprol' should be considered for control of the associated depression and anxiety:*

cardiovascular disorders ■ arthritis ■ cancer ■ menopause ■ alcoholism  
■ obesity ■ asthma, hay fever and related allergies ■ chronic infectious diseases  
■ dermatoses ■ G.I. disorders, and many other organic disturbances.

**When you recognize depression and anxiety traceable to an emotionally charged situation with no somatic disorder—start the patient on 'Deprol'.**

*Typical situations in which 'Deprol' is indicated:*

fear of cancer or other life-threatening disease ■ pre- and post-operative fears  
■ postpartum despondency ■ family problems ■ death of a loved one ■ loss of work  
■ retirement problems ■ financial worries, and many other stressful situations.

# Deprol<sup>®</sup>

**meprobamate 400 mg. + benactyzine hydrochloride 1 mg.**

**BRIEF SUMMARY:** *Indications:* Depression, especially when accompanied by anxiety, tension, agitation, rumination or insomnia. *Side Effects:* Slight drowsiness and, rarely, allergic reactions, due to meprobamate, and occasional dizziness or feeling of depersonalization in higher dosage, due to benactyzine, may occur. Meprobamate may increase effects of excessive alcohol. Use with care in patients with suicidal tendencies. Consider possibility of dependence, particularly in patients with history of drug

or alcohol addiction. Withdraw gradually after prolonged use at high dosage. *Complete product information available in the product package, or to physicians upon request.*

**USUAL ADULT DOSAGE:** 1 tablet q.i.d. May be increased gradually, as needed, to 3 tablets q.i.d.; with establishment of relief, may be reduced gradually to maintenance levels.

**SUPPLIED:** Light-pink, scored tablets. Bottles of 50.



**WALLACE LABORATORIES / Cranbury, N. J.**

CD-817

**Visit our Booth No. 22 at the Annual Meeting**



in virtually all diarrheas... prompt symptomatic control

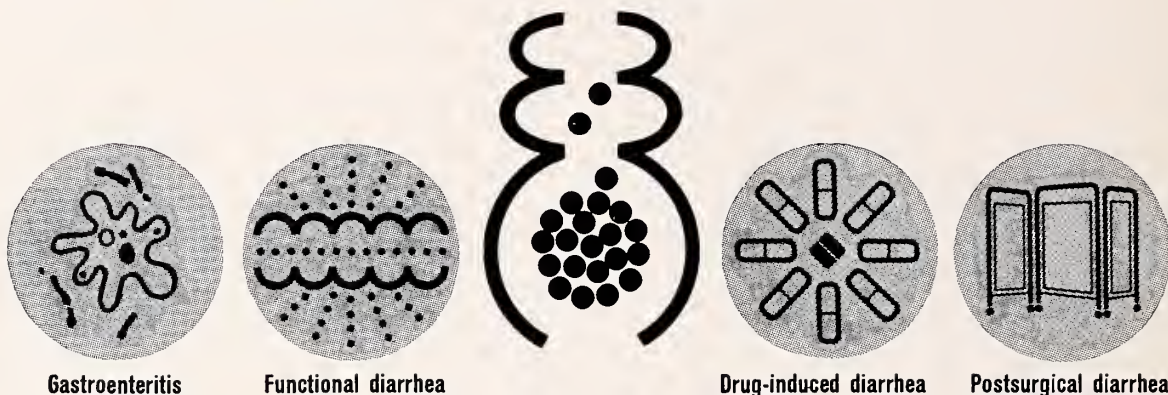
# LOMOTIL<sup>®</sup>

TABLETS / LIQUID—Each tablet and each 5 cc. of liquid contains:

diphenoxylate hydrochloride . . . 2.5 mg.

(Warning: May be habit forming)

atropine sulfate . . . . . 0.025 mg.



Lomotil controls the basic physiologic dysfunction in diarrhea—excessive propulsive motility. Pharmacologic evidence indicates that it does so by directly inhibiting propulsive movements of the intestines. This direct, well-localized activity controls diarrheas of widely varied origin and does so promptly, conveniently and economically.

The relatively few conditions in which Lomotil has given less than satisfactory control have been, for the most part, those such as severe ulcerative colitis in which too little anatomic or functional capacity of the intestines remains for the motility-lowering action of Lomotil to have effect.

It should be noted, however, that Lomotil has proved highly useful in mild to moderate ulcerative colitis and in several other refractory forms of diarrhea.

*The recommended initial adult dosage* is two tablets (2.5 mg. each) three or four times daily, reduced to meet the requirements of each patient as soon as the diarrhea is controlled. Maintenance dosage may be as low as two tablets daily. *Children's* daily dosage (in divided doses) varies from 3 mg. for a child of 3 to 6 months to 10 mg. for one 8 to 12 years of age. Lomotil is an exempt narcotic; its abuse liability is low and comparable to that of codeine. Recommended dosages should not be exceeded. Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness and insomnia. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates. Lomotil is a brand of diphenoxylate hydrochloride with atropine sulfate; the subtherapeutic amount of atropine is added to discourage deliberate overdose.

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February 7, 1964

Dr. Robert Lorenzen  
Editor, Arizona Medicine  
4533 North Scottsdale Road  
Scottsdale, Arizona

Dear Doctor Lorenzen:

As an addendum to my recent letter to you regarding the designation of Arizona Medical Association as ARMA I would call to your attention an official letter originating out of the offices of the Arizona Medical Association wherein the Arizona Medical Association carries ArMA. This has given me additional reason to pursue this incongruity further and this I find:

Ar — argon; arrived; aromatic; argentum; Arabic; Aramaic.

The proposed goal of avoiding confusion seems to me to have failed completely. Note the designation as recorded in a recent issue of Roundup\* here in Maricopa County. If there is by any stretch of the imagination any relationship between ArMA and A.R.M.A. that makes any sense when the usual rules of English are applied please point it out to me as I confess ignorance.

Very truly yours,  
D. W. MELICK, M.D.

\*Feb. 1964 issue of Roundup carried news notice on forthcoming annual meeting.

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February 10, 1964

Dr. Robert Lorenzen  
Editor, Arizona Medicine  
4533 North Scottsdale Road  
Scottsdale, Arizona

Dear Doctor Lorenzen:

Our good President, Dr. William Steen, passed along to me the suggestion that we consider renaming the Arizona Medical Association the Arizona STATE Medical Association. The application of ARMA would then be legitimate as it would connote exactly the fact that we do have four separate and distinct words in the title of our association. And think of the clinical advantage of having our state association as ASMA — what a break for the chest specialists!!!!

Respectfully yours,  
D. W. MELICK, M.D.

April, 1964

March 4, 1964

Dermont W. Melick, M.D.  
909 East Brill Street  
Phoenix, Arizona

Dear Doctor Melick:

Thank you for your additional comments regarding our use of ArMA (not A.R.M.A.) as an abbreviation for Arizona Medical Association. I would have to agree with you that some current abbreviations are rather stupefying. An example might be the Pentagon's use of FAGTRANS for "first available governmental transportation," or SODTICIOAP for "special ordnance depot tool identification, classification, inventory and obsolescence analysis program."

Although abbreviations and acronyms may have a deadening influence on our thought processes, they seem helpful at times when used in a consistent manner. Perhaps it would be more proper to use the correct abbreviation for Arizona and abbreviate our Society name with the rather phonetic ArizMA. The shorter form of ArMA, however, has achieved a certain amount of familiarity and acceptance and we feel it serves to distinguish between material relating to our Society and that concerning the American Medical Association.

Justification for the use of more than the initial letter of a word can be found in Md. for Maryland, or Ph.D. for doctor of philosophy.

Please continue to prod us on matters relating to the Journal as it keeps our grey matter on its toes.

Sincerely yours,

ARIZONA MEDICINE

Robert F. Lorenzen, M.D.  
Editor



7 March 1964

Dear Bob:

Thanks for your letter of March 4 on the use of the abbreviation ARMA to refer to our Association. I first suggested this term on the President's Page of *Arizona Medicine* in September, 1960. I enclose a reprint of that article. Though I was in part being jocular, it did seem to me that we needed a title to distinguish us from the AMA in the public press and a short form for avoiding the clumsiness and wasted time or space of employing the full name of the society in conversation, reports, and memoranda. It seemed wiser to call us ARMA than to fall back on a contraction of our former designation, the Arizona State Medical Association, and refer to us as ASMA.

ARMA is an acronym and, as such, perfectly acceptable in modern English usage. An acronym can be constructed from the initial letters of other words, or from one or more of the first few letters of other words. In fact, one of the examples given in the American College Dictionary is loran — long range navigation. ARMA is this latter kind of acronym.

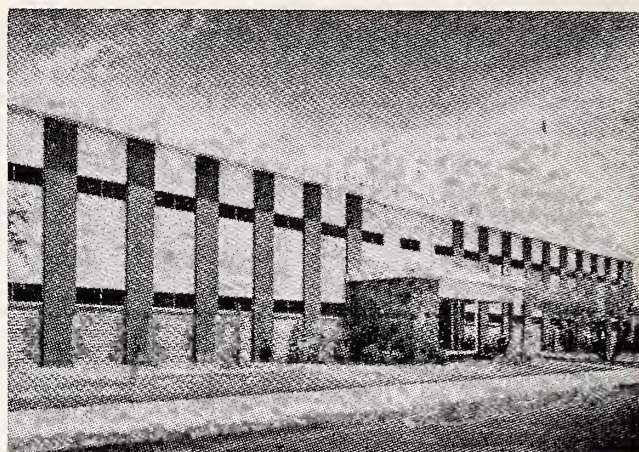
I have no particular pride of parentage in this appellation, though I think many have found it a time-saving shorthand. It does strike me that its purist critics, who would presumably have us return to the statlier language of Chaucer, should carry their crusade next to the AMA and force discontinuance of those two pronounced insults to our common medical tongue, JAMA and AMPAC.

Sincerely,  
Lindsay E. Beaton, M.D.

Robert F. Lorenzen, M.D.  
Editor  
Arizona Medicine  
P. O. Box 128  
Scottsdale, Arizona

*The September, 1960 President's Page which Doctor Beaton refers to is reprinted in its entirety on page 281 of this issue.*

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# Arizona Medical Association Reports

## The President's Page

ArMA

by

Lindsay E. Beaton, M.D.

*The following article was written by Doctor Lindsay E. Beaton, of Tucson, during his tenure as President of the Arizona Medical Association and appeared in the September, 1960 issue of Arizona Medicine. It is reprinted in its entirety. See the Correspondence Section, page 279 for further information on this subject.*



**Lindsay E. Beaton, M.D.**

Welcome home from vacation — to consideration of weighty matters.

The twentieth century has been given many appellations — the Age of the Common Man, the Atomic Era, the Dawn of Democracy, the Scientific Renaissance. Some of us who have served in the Armed Forces have been tempted to think of it as the

to be not exactly welcome at the family dinner table. Finally, the increasing complexity of social and political organization, both nationally and internationally, has added literal thousands, until the reader of average information material is expected to recognize by abbreviation an astounding number of institutions, persons, and groups. One presumes that this situation derives from a journalistic attempt at simplification and space-saving, but at the same time the result has been a vulgarization of the language. At its extreme, combined with other linguistic trends, it contributes to incomprehensible new jargons, such as Pentagonese and Psychoanalytic Pidgin.

There are two kinds of abbreviation, as Graham DeShane classifies them in a recent editorial in *Science*. The classic type is formed from the initial letters of the words in a title. A modern second sort, which may descend from chemical notation, is one in which one or more of the first few letters are taken from each of the words of the title and so arranged as to make a new, contrived and pronounceable word. In the first category are most of the earlier examples, dating back to New Deal days or before, such as GOP, FBI, CIO, and so on. The second variety may be originally a military phenomenon. "Blimp" is an example of an early invention, from British "B" class "limps,"

Epoch of Paper. But to a lexicographer, or perhaps even to an ordinary citizen trying to decode his morning news sheet, it might well be called the Age of Abbreviation.

This condensation of language seems seriously to have begun with the proliferation of federal agencies under the New Deal, and most of us still recall, with mixed emotions, the CCC, the WPA, the NRA, and many more. During World War II, the Services compounded the practice, and ETO, SOPAC, METOUSA, and hundreds of other contractions were added to the common tongue of the soldier and sailor, along with certain pungencies found after demobilization



## Reprint

as opposed to rigid dirigibles. Naturally this species has bloomed since 1941 and throughout the war years and after and has enriched the martial vocabulary with sonorous terms like USAFISPA (United States Army Forces in the South Pacific Area), the evocative MOMP (Mid Ocean Meeting Point) of the Atlantic Fleet, and the more recent KATUSA's (Koreans augmenting the U. S. Army). There seems to be an increasing tendency toward this second style, and no self-respecting civic agency would publish its masthead till it had invented a name that could be twisted, by the rules here outlined, into a catchy vocable. So marked is the trend that radio stations, whenever possible, alter their call letters to make an ersatz word that can be sounded loudly as a cultural identification.

Medicine has always had its own verbal shorthand, arcane and at least in part designed, like the prescription, to confuse the laity. For example, PA does not mean to the doctor Public Address system but either pernicious anemia or paralysis agitans, depending on his professional preoccupations. MS does not medically stand for Master of Science but for morphine sulfate or multiple sclerosis. SOB indicates short of breath and not Senate Office Building. GI signifies to the physician neither galvanized iron nor government issue but gastro-intestinal. The discomfiture that arises from misunderstanding of these contractions was nicely illustrated in the case of the dignified Colonel, Professor of Military Science and Tactics at the University of Arizona, who became enraged when he walked into a Tucson roentgenological office for a barium enema only to hear the receptionist sing out to a technician in the rear, "Mabel, your GI is here."

Well, all of this makes an innocent parlor game, if you weary of the idiot box some night, and I leave it at that.

Anyone who has busied himself with the affairs of the Arizona Medical Association soon learns that there are many abbreviations in common use for various committees and personages in the Society. AM, for example, always means *Arizona Medicine* and not ante meridiem. BME stands for the Board of Medical Examiners and not for Bachelor of Mechanical Engineering. CO is Central Office, not Commanding Officer; PC is Professional Committee, not post

cibum; IC is Industrial Commission, not Illinois Central railroad; SAC is Scientific Assembly Committee, not Strategic Air Command. Coming down to persons, SW conveys not Southwest but our legal firm, Snell and Wilmer, the habitat of our unequalled counsel, Edward Jacobson; RC throughout the Association always signifies not Red Cross or Royal Crown cola, but the incomparable Robert Carpenter, our Executive Secretary; and PB suggests his Assistant, Paul Boykin, and not the metal lead — certainly not in the energetic Mr. Boykin. Then there are our ancillary cohorts. WA stands for the Woman's Auxiliary, not Western Australia. BC denotes Blue Cross, not British Columbia. And BS means Blue Shield.

Perhaps RC and PB of the CO should publish a glossary in AM.

All of this is a long preamble to a short suggestion. The Arizona Medical Association needs an official abbreviation. For want of one the press has been using AMA, which is obviously already preempted, and the application of which is at times embarrassing to us. Some in the CO have had recourse to TAMAI (The Arizona Medical Association, Inc.) This I find vaguely oriental in appearance and objectionable in pronunciation, for it is sounded to remind one of Debbie Reynolds twittering a popular ballad only recently and unlamentably absent from the radio waves. DuShane has pointed out that there are short forms better left unvoiced; he cites DOD (Department of Defense) as one. And the American Association for the Advancement of Science would rather, he says, have you call the AAAS "the A-cube-ess" (A<sup>3</sup>S) or the "the triple-a-ess."

Let me then speak for ArMA, not from the Latin, though the allusion is not inappropriate, for our Society would like to be regarded as part of the physician's "arms" in his battle against disease, but as a word constructed from the Arizona Medical Association. This has good precedent in its method of formation; it is easily pronounced; it has no offensive connotations; it robs no other organization. Even the gentlemen of the press might be induced to try it.

Perhaps like other noble experiments, this notion is destined only for oblivion, but the Association does deserve its own distinctive abbreviated title.





A TRIBUTE  
TO  
DOUG  
GAIN  
1917-1963



Henry  
Trautmann,  
M.D.  
1890 - 1964

Dear Doug:

You were my friend and they have asked me to write a tribute to you. Where shall I begin, Doug? There is so much to say. As a radiologist you were excellent. You were never too busy to look after important details. You were scrupulous in technique and excellent in diagnosis. Yet, as a specialist, you never lost sight of the whole of medicine nor of the patient as a human being. It was a rewarding and educating experience for all of us who knew you professionally.

Some of us, Doug, were even more fortunate. We have known you as a friend and the family man you truly were. Your love and devotion to your family has been an inspiration to all of us. You were never too busy to give of yourself fully in the role of husband and father.

Lastly Doug, we shall always remember you for your love of the great outdoors and the enjoyment and comradeship of the hunt. There are so many wonderful memories you have left so many of us.

Doug, you lived as a man in every way and when your final hour came, you died as a man. God speed and may the Divine Physician guide your way. Well done, Doug, well done.

Your friend,  
Bill

William J. LaJoie, M.D. is the author of this final tribute to his friend and colleague, Doctor Gain.

After 43 years of general practice, Doctor Henry Trautmann died January 31, 1964 at the Baptist Hospital of Scottsdale, at the age of 73 from myocardial infarction.

Doctor Trautmann was born in Morrison, Wisconsin on October 27, 1890 and graduated from the University of Virginia School of Medicine in 1916. He served in the United States Medical Corp during World War I. Following his Army Service, he entered general practice in Brooklyn, New York, remaining there from 1919 to 1945 at which time he moved to Madison, Wisconsin. In 1960 he moved to Arizona and joined the Maricopa County Medical Society, continuing his practice with Doctor R. P. Watterson in Scottsdale.

Surviving are a son, Henry, Jr., of Houston, Texas; two daughters, Miss Fannie P. Trautmann of New York City and Mrs. Marie Koch of Madison, Wisconsin; one brother, John Trautmann, Appleton, Wisconsin; and six grandchildren. He was preceded in death by his wife by one year.

Doctor Trautman was a member of the Valley Presbyterian Church of Scottsdale. He will be remembered by his patients and friends for his continuing interest in metabolic and nutritional diseases and his humanitarian philosophy.

Robert P. Watterson, M.D.



# A statement to physicians concerning a new concept for feeding infants in the home

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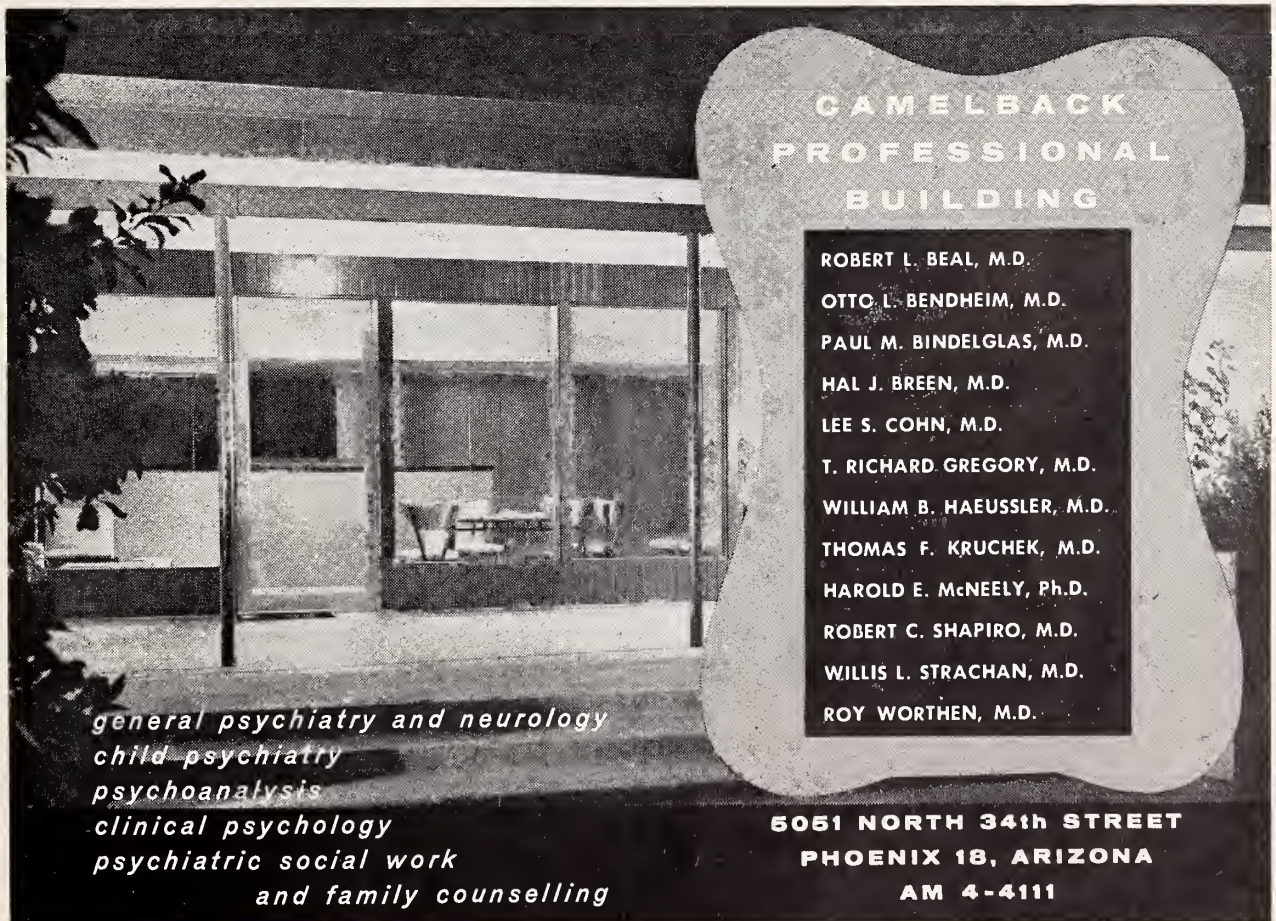
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MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO



May, 1964  
Vol. 21, No. 5

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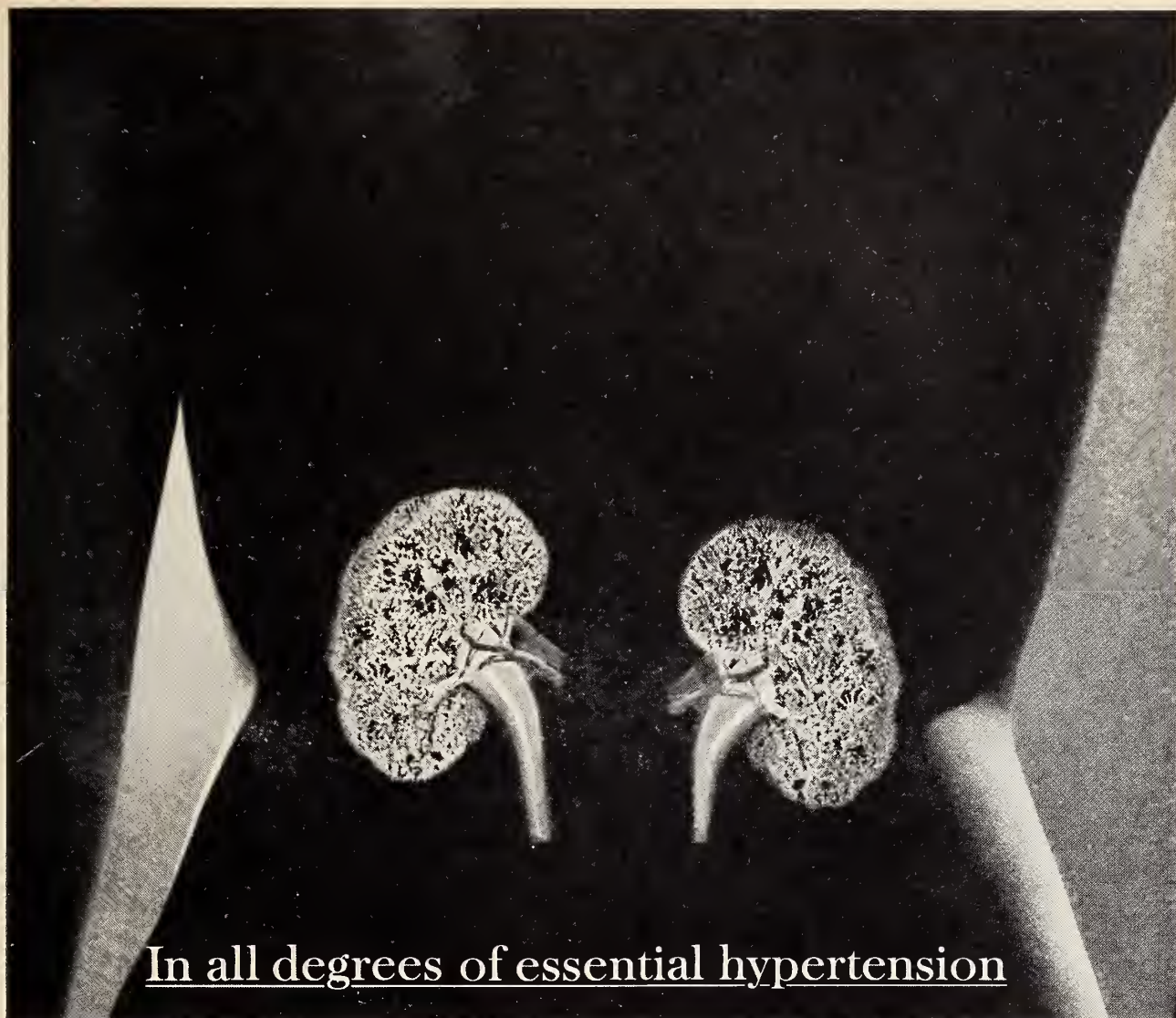
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**References:** (1) Moyer, J. H., and Heider, C.: *Am. J. Cardiol.* 9:920 (June) 1962. (2) Brest, A. N., and Moyer, J. H.: *Pennsylvania M. J.* 63:545 (Apr.) 1960. (3) Berry, R. L., and Bray, H. P.: *J. Am. Geriatrics Soc.* 10:516 (June) 1962. (4) Hutchison, J. C.: *Current Therap. Res.* 4:610 (Dec.) 1962. (5) Feldman, L. H.: *North Carolina M. J.* 23:248 (June) 1962.

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# Arizona Medicine

JOURNAL OF ARIZONA MEDICAL ASSOCIATION  
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May, 1964  
Vol. 21, No. 5

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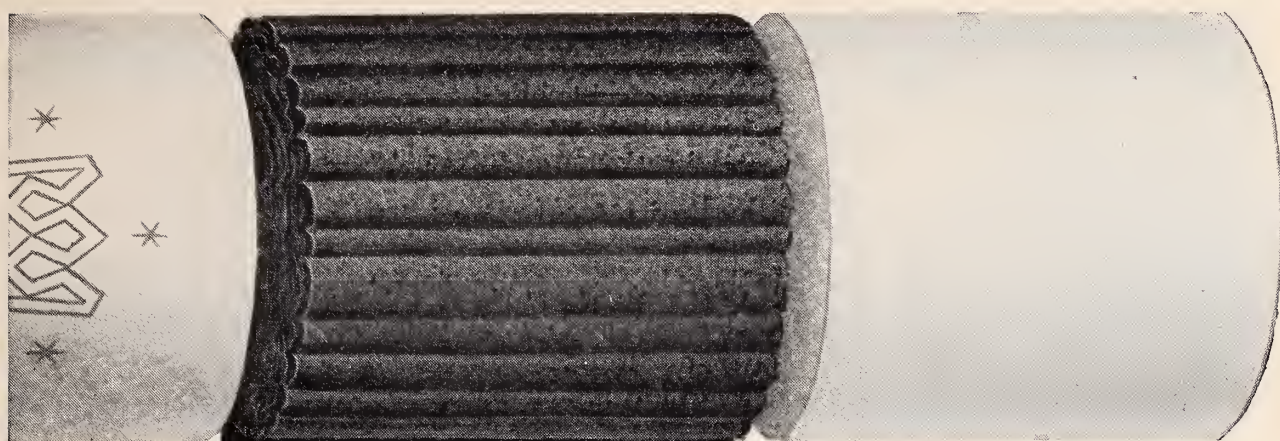
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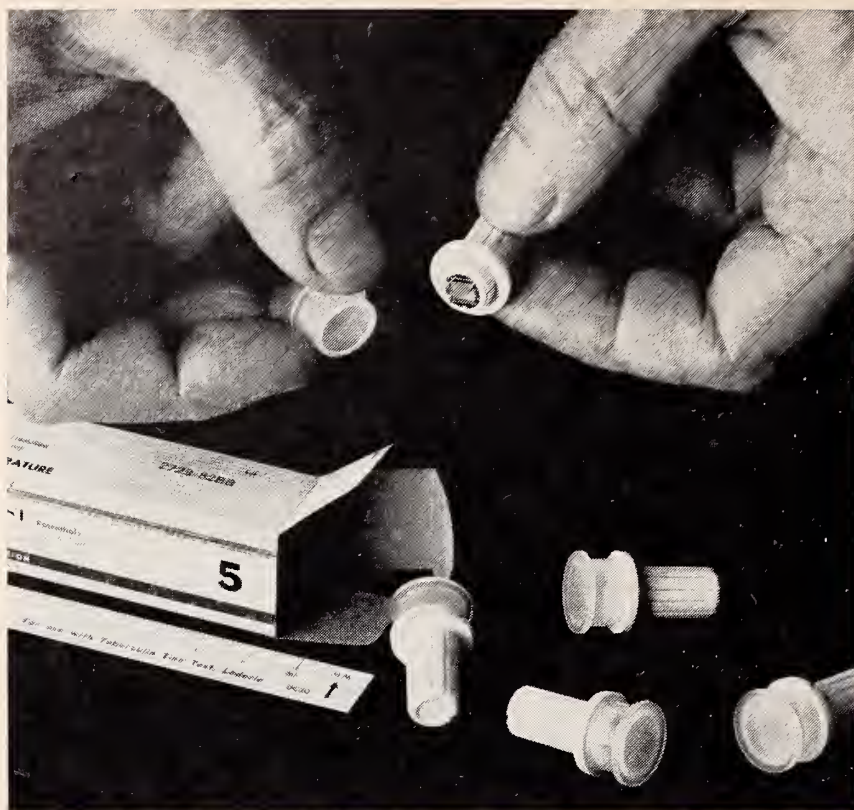
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## PROFESSIONAL COMMITTEE

Meeting of the Professional Committee of The Arizona Medical Association, Inc. held Sunday, March 22, 1964, in the French Quarter of the Safari Hotel, Scottsdale, Arizona, convened at 10:30 a.m., Robert B. Leonard, M.D., Chairman, presiding.

## ROLL CALL

### Present

Drs. Alway, James D.; Brewer, W. Albert, President-elect; Farness, Orin J.; Henderson, Charles E., Secretary; Kohl, Jr., Harold W.; Leonard, Robert B., Chairman; Meyer, Karl L.; Rhu, Jr., Hermann S.; and Steen, William B., President.

### Staff

Messrs. Boykin, Paul R., Assistant Executive Secretary; Robinson, Bruce E., Executive Assistant.

### Guest

Dr. Moore, William J., Deputy Commissioner, Arizona State Department of Health.

### Excused

Drs. Baker, Earl J.; Bendheim, Otto L.; Cole, Roger W.; and Fife, Ray.

## MINUTES

The minutes of the meeting of the Professional Committee held December 15, 1963 were approved as read by the Chairman.

## SUBCOMMITTEE REPORTS

### Aging

Doctor Kohl referred to receipt of a 200-page booklet on the "Proceeding of the Council on Aging" which he maintained in his possession and it will be available to any member of the Association on request, for reference.

Doctor Kohl also reported on a letter dated December 30, 1963 addressed to Chairman, State Medical Association Committee on Aging, from Frederick C. Swartz, M.D., Chairman, AMA Committee on Aging, relative to the formation of the National Council on Accreditation of Nursing Homes sponsored jointly by the American Medical Association and the American Nursing Home Association, to carry out a nationwide program for promoting high standards of care in nursing homes.

The committee also reviewed a letter from Mrs. Hazel Bennett, R.N., Executive Director, Arizona Nurses Association, dated February 25, 1964, directed to William B. Steen, M.D., President of ArMA relative to the many problems encountered in providing adequate care for patients in nursing homes in Arizona and the inability to secure and obtain good nurses for positions in these homes.

To activate the program, the committee determined to request information from the Arizona State Department of Health relative to the nursing homes, sheltered care homes and domiciliary care institutions in the State of Arizona; to refer this information to the subcommittee on Aging and the subcommittee on Hospitals, Nursing and Hard of Hearing, that they may prepare recommendations for the Professional Committee relative to accreditation of nursing homes, the nurses program, the AMA program, control, limitations and other data on the subject.

It was regularly moved and unanimously carried that

the Professional Committee recommends to the Board of Directors of ArMA that it look with favor on the project of the American Medical Association and the American Nursing Home Association for accreditation of licensed nursing homes; that further details be sought; and that all information relative thereto be disseminated to the component county societies for their action.

It was regularly moved and carried that we accept the report of the subcommittee on Aging.

### Cancer

Doctor Brewer reported on the current status of cancer registries and their activities for the edification of the committee.

Doctor William J. Moore, Deputy Commissioner, Arizona State Department of Health stated that "if the Arizona Medical Association wishes support of the Chronic Disease Division of the State Department of Health in supplying funds and personnel to develop the (Cancer) registry, they would be happy to do this."

It was regularly moved and unanimously carried that the Professional Committee recommend to its Board of Directors that it request of Arizona hospitals with Tumor Registries, to report within three months and annually thereafter, their statistics, to the subcommittee on Cancer of the Professional Committee of The Arizona Medical Association, Inc.; and the Professional Committee further requests the Board of Directors to forward the Professional Committee's recommendations to the State Cancer Division and request their approval and cooperation.

### Disaster Medical Care

We're cognizant of the action of this committee and the Board of Directors in the program of the subcommittee on Disaster Medical Care and that the action came too late in planning of the Scientific Assembly Committee and that they encourage Doctor Baker to have his program in the hands of the Scientific Assembly Committee not later than August of 1964 for the 1965 Annual Meeting.

It was regularly moved and unanimously carried that the Professional Committee recommend to the Board of Directors of ArMA that it recommend to the Governor of the State of Arizona, that his program for Civil Defense in the State of Arizona be included and made a part of the Disaster Medical Care program of the Arizona State Department of Health.

The subject of medical aspects of driver limitations was brought to the attention of the committee by the Chairman and discussion was held on the subject.

AMA's recommendations for driver limitations be conducted at least under the following conditions:

1. When a license applicant displays an obvious physical impairment.
2. When a driver has been involved in multiple accidents within a certain calendar period.
3. When a driver must be placed in the assigned risk pool for insurance underwriting caused by refusal of commercial insurance carriers to assume the risk.
4. When a driver voluntarily suggests that he may have blacked out or a medical problem contributed to an accident.

Received for information.



# Arizona Medical Association Reports

MEETING ADJOURNED FOR LUNCHEON AT 12:30 P.M.

MEETING RECONVENED AT 2:05 P.M., ALL MEMBERS PRESENT DURING THE MORNING SESSION RESPONDING "AYE" TO THE ROLL CALL.

## General Medicine

It appears there has been some confusion relative to the subject of poliomyelitis immune globulin and its proper term "vaccinia immune globulin," the latter of which is correct.

It was directed that the Editor-in-Chief be requested to re-publish the announcement on vaccinia immune globulin as was carried in the September, 1963 issue of Arizona Medicine on page 43A.

Considerable discussion was held on the subject of the Council on Rural Health of AMA and its relationship to rural health problems in Arizona. It was indicated many rural health problems in Arizona were of an indigent nature and of the non-migrant migrant.

It was regularly moved and unanimously carried that the Professional Committee recommend to the Board of Directors to request the Arizona State Department of Health to report on the extent of the non-migrant health problems in Arizona, particularly as they relate to Maricopa and Pinal Counties, for the edification of the Professional Committee.

It was regularly moved and unanimously carried that we accept and approve the report of the subcommittee on General Medicine.

## Hospitals, Nursing and Hard of Hearing

The committee considered at length, the subject of rules and regulations for convalescent and nursing homes.

It was regularly moved and unanimously carried that the Professional Committee re-affirms its previous recommendation to the Board of Directors, that the Arizona State Department of Health be urged to require that all facilities designated as hospitals be required to have a clinical pathological laboratory and radiological facility within the hospital and that nursing homes or so designated institutions shall be required to have 24-hour attendance by registered nurses.

A letter of policy statement on hospitals from the AFL-CIO, was received for information.

## Maternal and Child Health

It was reported the membership of the subcommittee on Maternal and Child Health, as finally constituted, is as follows: Doctors Richard S. Armstrong (Tucson) (PATH); Martin Cohen (Yuma) (OBG); Owen L. Cranmer (Cottonwood) (OBG); Philip E. Dew, Secretary, (Tucson) (PD); Robert S. Ganelin, Vice Chairman (Phoenix) (PD); Max J. Kartchner (Benson) (GP); William D. Lawrence (Phoenix) (OBG); John H. McEvers (Tucson) (OBG); Robert E. Montgomery (Douglas) (GP); William J. Moore (Phoenix) (PH); Maxwell R. Palmer (Tucson) (ANES); Herbert E. Pollock (Tucson) (OBG); Hermann S. Rhu, Jr., Chairman (Tucson) (OBG); Joseph Saba (Warren) (GP); Edward Satten-spiel (Phoenix) (OBG); David D. Smith (Flagstaff) (GP); Martin S. Withers (Tucson) (PD); and Florence H. B. Yount (Prescott) (PD).

The chairman of the subcommittee reviewed the correspondence relative to the statutory requirements

for complete physical examination in addition to a serological test for syphilis, as part of the requirements for a marriage license.

It was reported there is on record an Attorney General Opinion which indicates that "the extent of the examination meets the requirements of the statute so long as it includes the serological test and enables the physician to certify that the person has been given an examination for the discovery of syphilis."

The Chairman, Doctor Rhu, presented for consideration of the committee, a resolution of the Arizona Pediatric Society and the Maricopa County Pediatric Society relative to legislation providing state control inspection and licensing of day care facilities for pre-school children in Arizona.

It was regularly moved and carried that we recommend to the Board of Directors of ArMA that we accept the resolutions of the Arizona Pediatric Society.

It was regularly moved and unanimously carried that we recommend to the Board of Directors that is support Senate Bill No. 260 now before the 26th Arizona State Legislature for licensure of day care centers.

It was determined to forward this recommendation to the Legislative Committee of ArMA by direction of three members of the Executive Committee of ArMA in attendance at this Professional Committee meeting.

Doctor Rhu briefed the Professional Committee on the activities of the subcommittee on Maternal and Child Health relative to a recent meeting on peri-natal and pre-natal morbidity study in the State of Arizona, indicating a full report would be prepared for the Professional Committee for its next scheduled meeting.

It was regularly moved and unanimously carried that we accept the report of the subcommittee on Maternal and Child Health.

## Mental Health

On re-referral of the Board of Directors in meeting held February 9, 1964, the Professional Committee was asked to review the SKF Cooperative Plan for Mental Health and provide the Board of Directors with definite recommendations.

It was regularly moved and carried that we refer the subject to the subcommittee on Mental Health for further study and definite recommendations; that we write the Arizona State Psychiatric Society for its comments and recommendations relative to this specific subject; and that we issue a formal request to William J. Moore, M.D., Deputy Commissioner, Arizona State Department of Health, for his comments relative to the subject.

The Professional Committee reviewed a letter dated January 6, 1964 over the signature of Karl E. Voldeng, M.D. of Phoenix, relative to proposed legislation (H.B. 299) for a Commission on Alcoholism.

The Professional Committee directed that this item be referred to the subcommittee on Mental Health with a request for review and recommendation before the next meeting of the Professional Committee and that the subcommittee contact William J. Moore, M.D., Deputy Commissioner, Arizona State Department of Health, for his comments relative to the subject.

The committee reviewed a letter dated March 3, 1964 over the signature of Frank R. Walls, Administrator of



the Franklin Hospital, Phoenix, offering the services of V. W. Werner, a well known authority in the field of alcoholism, as a speaker or lecturer on alcoholism free of charge to any professional, church, community or civic group in the Phoenix area. Received and filed.

## Rehabilitation, Industrial Health and Crippled Children

Doctor Alway reported that no new problems had come to the attention of the subcommittee since the last meeting of the Professional Committee; however, a letter report of the Co-Chairman was read as follows:

"Information coming to my attention as regards rehabilitation has been minimal. It might be reported that we have continued our registration with the AMA Committee on Rehabilitation indicating active directories on rehabilitation in both Pima and Maricopa Counties. Information has been sent to the Arizona Medical Journal encouraging Arizona physicians and others interested to utilize the increasing source of information we have. Additions to this information include rather extensive information obtained from the Division of Rehabilitative Medicine at Stanford University Medical Center as well as from the Rehabilitation Institute at Chicago, both of which are interested in referral patients. I have no information referable to the progress or activities of the Department of Rehabilitation of the University of Arizona but hope that the ad hoc Committee which has been appointed, will have information to present to the Professional Committee at this time."

Doctor Farness raised question as to the assignment of the ad hoc Committee of the Professional Committee for review of the establishment of a Rehabilitation Center at the University of Arizona at Tucson, the ad hoc Committee consisting of Orin J. Farness, M.D., Chairman; Roger W. Cole, M.D.; and Harold W. Kohl, Jr., M.D. Many suggestions were offered.

It was regularly moved and carried that the Board of Directors of ArMA consider the necessity for urging the need for medical supervision for all state institutions seeking funds for development of medical facilities.

It was regularly moved and carried that the report of the subcommittee on Rehabilitation, Industrial Health and Crippled Children, be accepted.

## Venereal Disease and Medical Education

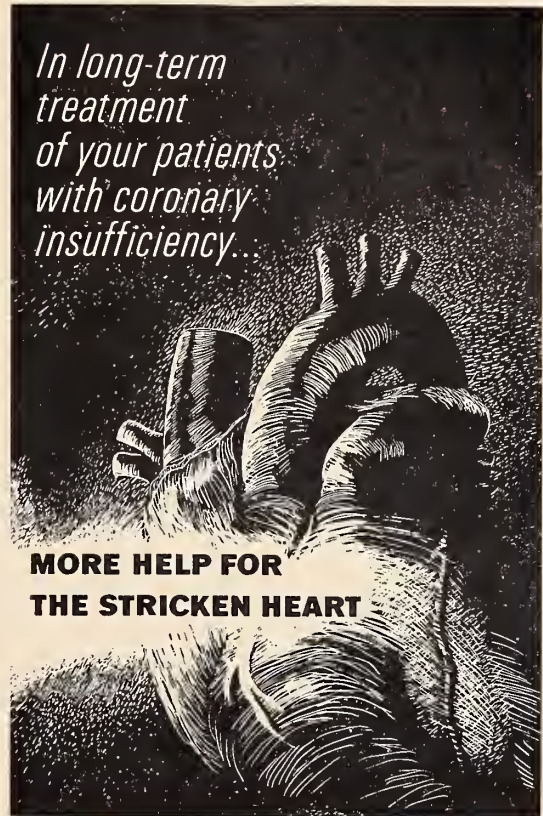
The Board of Directors of ArMA in meeting held February 9, 1964, referred back to the Professional Committee, the subject of TV spot announcements for Venereal Disease, for further investigation and specific recommendation.

It was recommended that Doctor Moore, Arizona State Department of Health, ascertain by survey of Arizona TV stations as to the availability of time for showing these spot announcements as a public service and report to the subcommittee.

It was regularly moved and carried that the subject of spot announcements and movies available for segregated audiences be researched carefully; that an attempt be made to obtain these films for review of the Professional Committee during the forthcoming Annual Meeting of ArMA; and that a complete detailed report together with specific recommendations be given to the Professional Committee at its next meeting.

MEETING ADJOURNED AT 4:30 P.M.

Charles E. Henderson, M.D., Secretary



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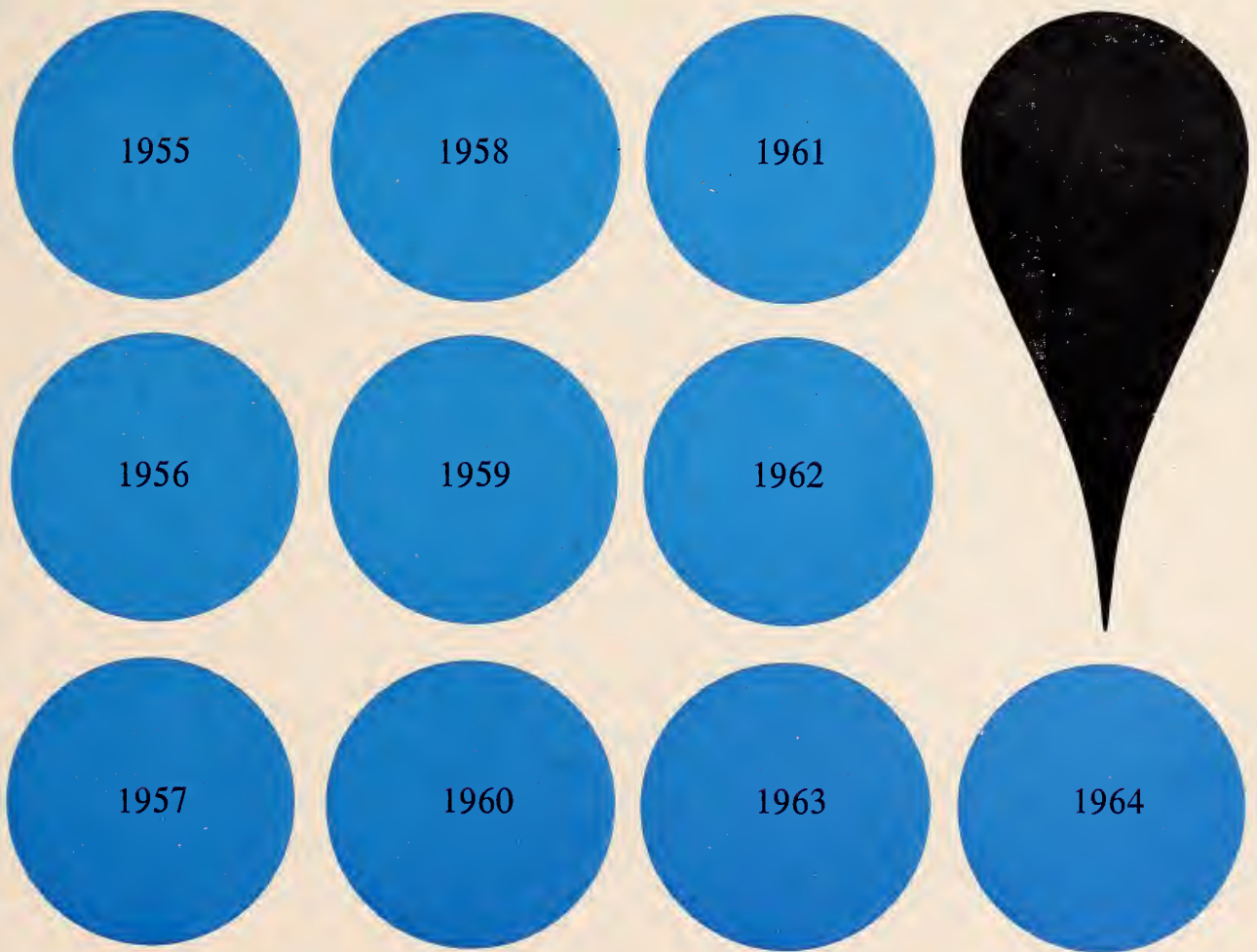
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# Pathologic Aspects of Chronic Pulmonary Hypertension

by

Vladimir I. Kanjuh, M.D.

and

Jesse E. Edwards, M.D.

**An understanding of the pathological aspects of pulmonary hypertension is essential to a physiologic basis of therapy.**

**P**ULMONARY hypertension only rarely is a primary condition. Usually it is a complication or one manifestation of cardiac, pulmonary parenchymal, peripheral venous, or a generalized disease.<sup>1</sup> The level of pulmonary arterial pressure is an expression of the volume of pulmonary blood flow in a given period of time and of the resistance imparted to that flow. When the pulmonary arterial pressure is elevated it represents one of two possible situations. Either pulmonary blood flow is increased in conjunction with increased levels of pulmonary vascular resistance or the resistance is abnormally high.

The term pulmonary vascular resistance as used here refers to a summation of the factors causing a barrier to the flow of blood through the lungs.<sup>2</sup> The components of the barrier take several forms, including any impediment to the flow of blood from the pulmonary veins. The total barrier is also reflected in the capacity of pulmonary vascular bed. The smaller the bed,

the higher is the barrier, or pulmonary resistance, offered. The capacity of the vascular bed depends upon the degree of vasoconstriction and upon luminal obstruction caused by intimal lesions or by particles within the lumens of the vessels. A decrease in capacity of the pulmonary vascular bed also results when part of the bed is ablated, either surgically or by disease. Also, for a given vascular bed, the resistance that it offers to the flow of blood depends upon the volume of blood that is delivered into the system. When the volume is so great that the bed is distended nearly to its full capability for distention, addition of more blood will result in a rise in the barrier to pulmonary blood flow. Resistance also varies with changes in intra-alveolar pressure and with variations in bellows action of the lungs.

It is evident that pulmonary vascular resistance is a complex phenomenon; in any specific situation it may be impossible to identify each component element and what part it plays in contributing to the total resistance. Nevertheless, it is recognized that for a particular volume of blood flow the resistance offered plays an essential role in governing the level which the pulmonary arterial pressure assumes.

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TABLE

Classification of Chronic Pulmonary Hypertension

- I. PULMONARY HYPERTENSION WITH INCREASED PULMONARY FLOW.
  - 1. Free Communication Between Ventricles or Great Arteries.
  - 2. Atrial Septal Defect.
- II. PULMONARY HYPERTENSION WITHOUT INCREASED PULMONARY FLOW.
  - 1. Pulmonary Vascular Disease.
    - a. Primary luminal obstruction.
    - b. Primary intimal disease.
    - c. Medial hypertrophy.
  - 2. Pulmonary Parenchymal Disease.
  - 3. Pulmonary Venous Obstruction.

Histologic examination of the lungs in patients with pulmonary hypertension may reveal certain changes that contribute to pulmonary vascular resistance. Such changes taken in conjunction with clinical, radiologic,<sup>3</sup> and physiologic<sup>4</sup> observations may serve as the basis for a classification of pulmonary hypertension (Table).

We shall now consider the highlights of the various types of pulmonary hypertension within the framework of the classification given.

Pulmonary Hypertension With Increased Pulmonary Flow  
Free Communication Between Ventricles or Great Arteries

IN CONDITIONS characterized by a free communication between the ventricles or between the great arteries, such as a large ventricular septal defect (Fig. 1), wide patent ductus arteriosus, or wide surgical anastomosis between the systemic and pulmonary arteries<sup>5-7</sup>, the systolic pressures are equal in the two ventricles and in the systemic and the pulmonary arteries. The shunt through the communication is in the direction of that system with the lesser degree of vascular resistance (Fig. 2). In infancy and for varying periods beyond that age group the pulmonary vascular resistance, although greater than normal pulmonary vascular resistance, is lower than the systemic. When an opening of the type named is present, the shunt, therefore, is in a left-to-right direction and its volume is usually of considerable magnitude.<sup>8</sup> In this circumstance, the small pulmonary arteries and arterioles show medial thickening and the lumen

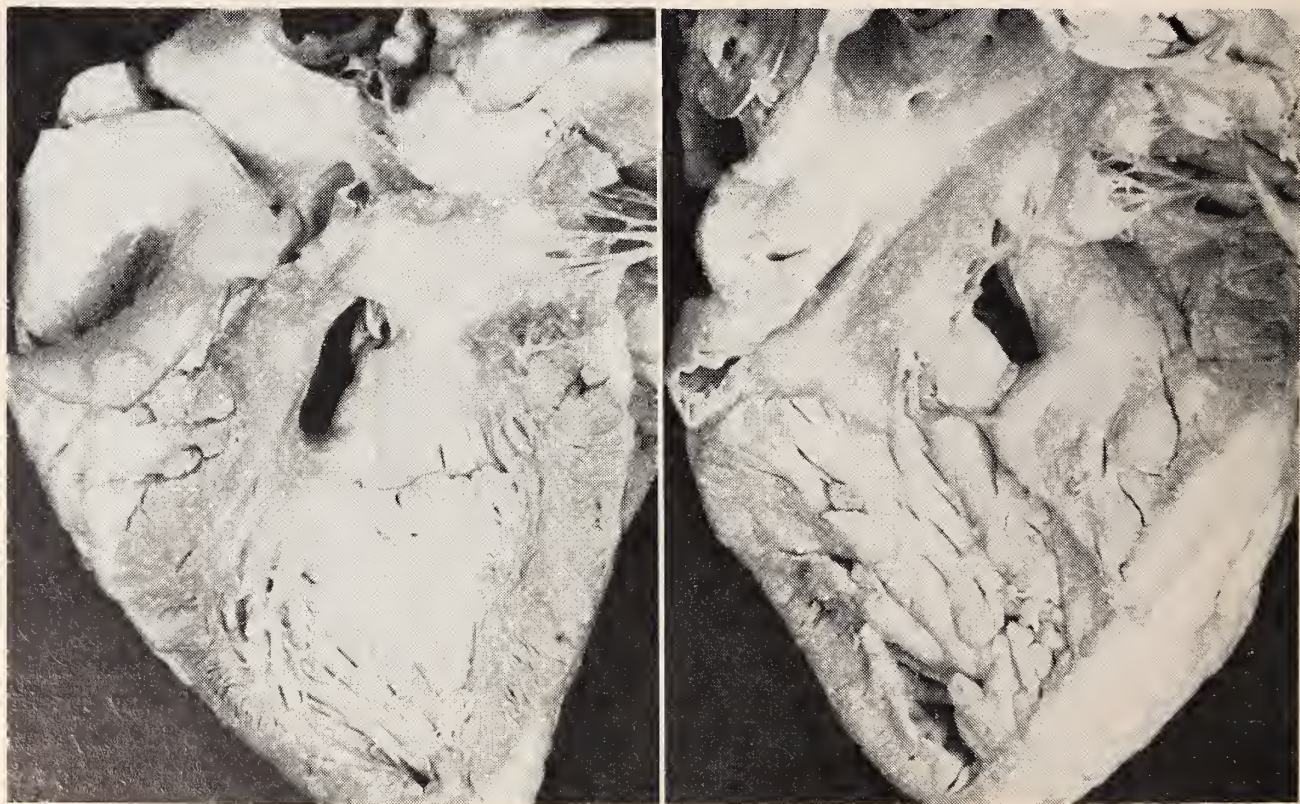


Fig. 1. Large ventricular septal defect in a 25 year-old woman. Defects of this general size are usually associated with a free communication between the ventricles and with pulmonary hypertension. In this instance, the defect is of the so-called A-V commune type. LEFT. Left ventricular view. The defect extends obliquely from the anterior leaflet of the mitral valve across the outflow portion of the left ventricle. RIGHT. Right side of heart. The defect lies under the septal leaflet of the tricuspid valve and extends against the septal limb of the crista supraventricularis.



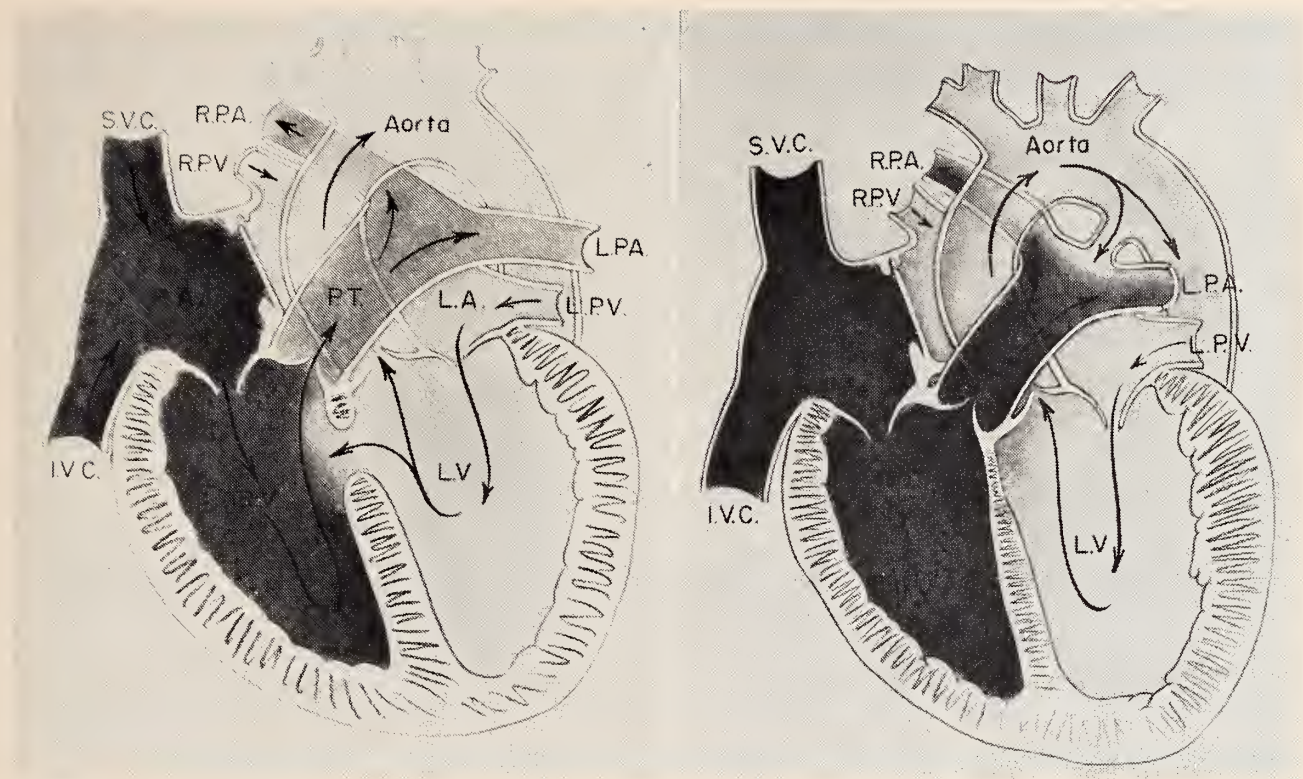


Fig. 2.

Diagrammatic portrayal of 2 conditions in which there is a free communication between the two ventricles or great arteries with a left-to-right shunt. LEFT. Large ventricular septal defect. RIGHT. Wide patent ductus arteriosus.

of the vessels are more narrow than in control subjects<sup>9-11</sup>. At this stage, characteristically, there are no intimal lesions.

Because the pulmonary vascular resistance is lower than the systemic, maintenance of pulmonary arterial systolic pressures at systemic level is dependent upon high pulmonary flow rates. At this stage those structural changes present in the pulmonary vascular bed are potentially reversible. Closure of the abnormal communication, whether it lies between the great arteries or between the ventricles, will result in an immediate reduction in the level of pulmonary arterial pressure<sup>12</sup>. It may fall to normal upon closure of the opening or some degree of immediate fall, though incomplete, may be followed by a gradual fall so that, with time, normal levels of pulmonary arterial pressure may be obtained<sup>13</sup>. The medial hypertrophy of the pulmonary arterioles and muscular arteries will regress and eventually structurally normal vessels will result.

It is recognized that in the untreated patient the stage of medial hypertrophy of the small pulmonary vessels is followed by one in which intimal lesions appear. These lesions are occlusive, and serve to raise the pulmonary vascular resistance.

As the pulmonary vascular resistance rises, the pulmonary flow may continue to be increased, as a manifestation of a continuing left-to-right shunt. Ultimately, as the pulmonary vascular resistance becomes equal to or exceeds the systemic resistance, the volume of pulmonary blood flow may fall to normal or less than normal.

At this stage a right-to-left shunt becomes the dominant factor (Fig. 3). It is apparent that a patient first observed at the latter stage presents a picture quite different from patients seen in the stage where increased pulmonary blood flow is the prominent feature.

Patients who are in an intermediate phase between the extremes may still have increased pulmonary blood flow. In these, when the defect is closed and the volume of pulmonary blood flow is reduced, the pulmonary pressure falls somewhat. Yet the pulmonary vascular resistance, at least in the weeks or months that follow the operation, will usually remain elevated<sup>14</sup>.

The complicating structural changes within the pulmonary vascular bed of patients having ventricular septal defect or functionally similar conditions have adequately been described<sup>9,15-18</sup>. These include non-specific intimal fibrosis, and



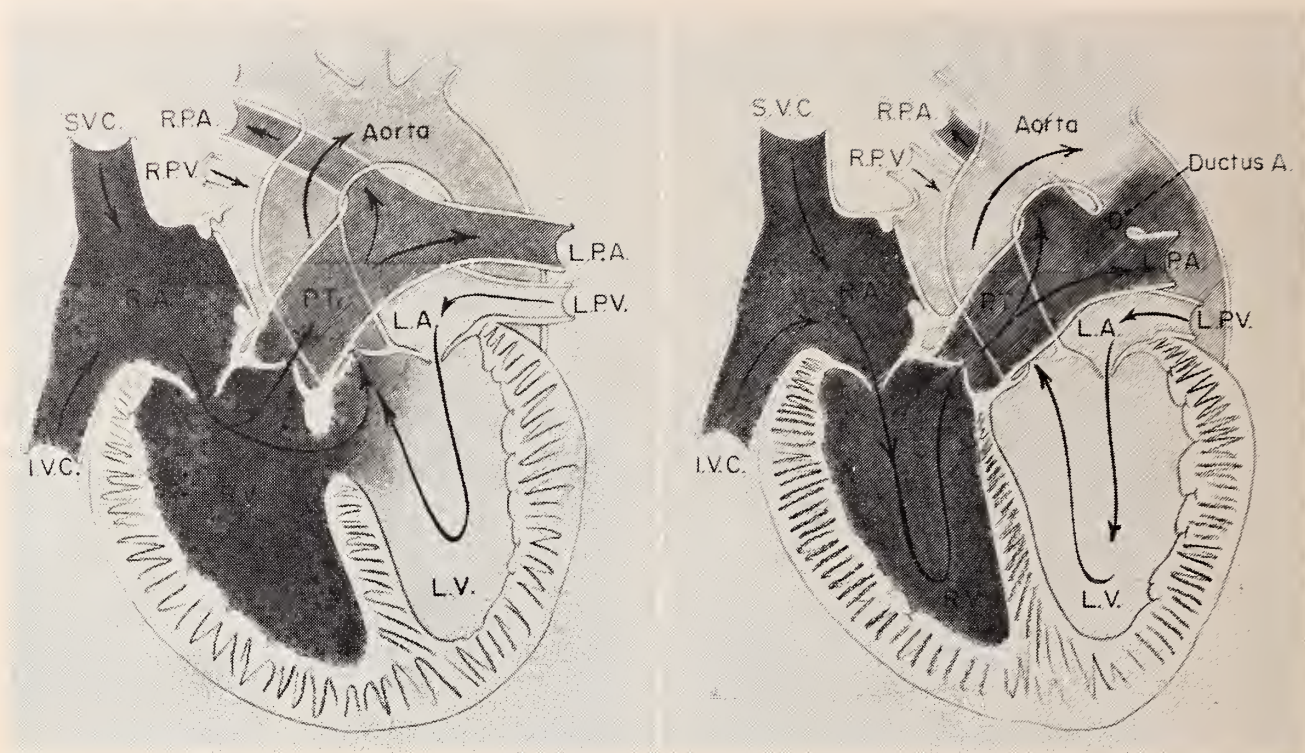


Fig. 3. Diagrammatic portrayal of 2 conditions in which there is a free communication between the two circulations with high levels of pulmonary vascular resistance and dominant right-to-left shunt through the abnormal opening. LEFT. Ventricular septal defect. RIGHT. Patent ductus arteriosus.

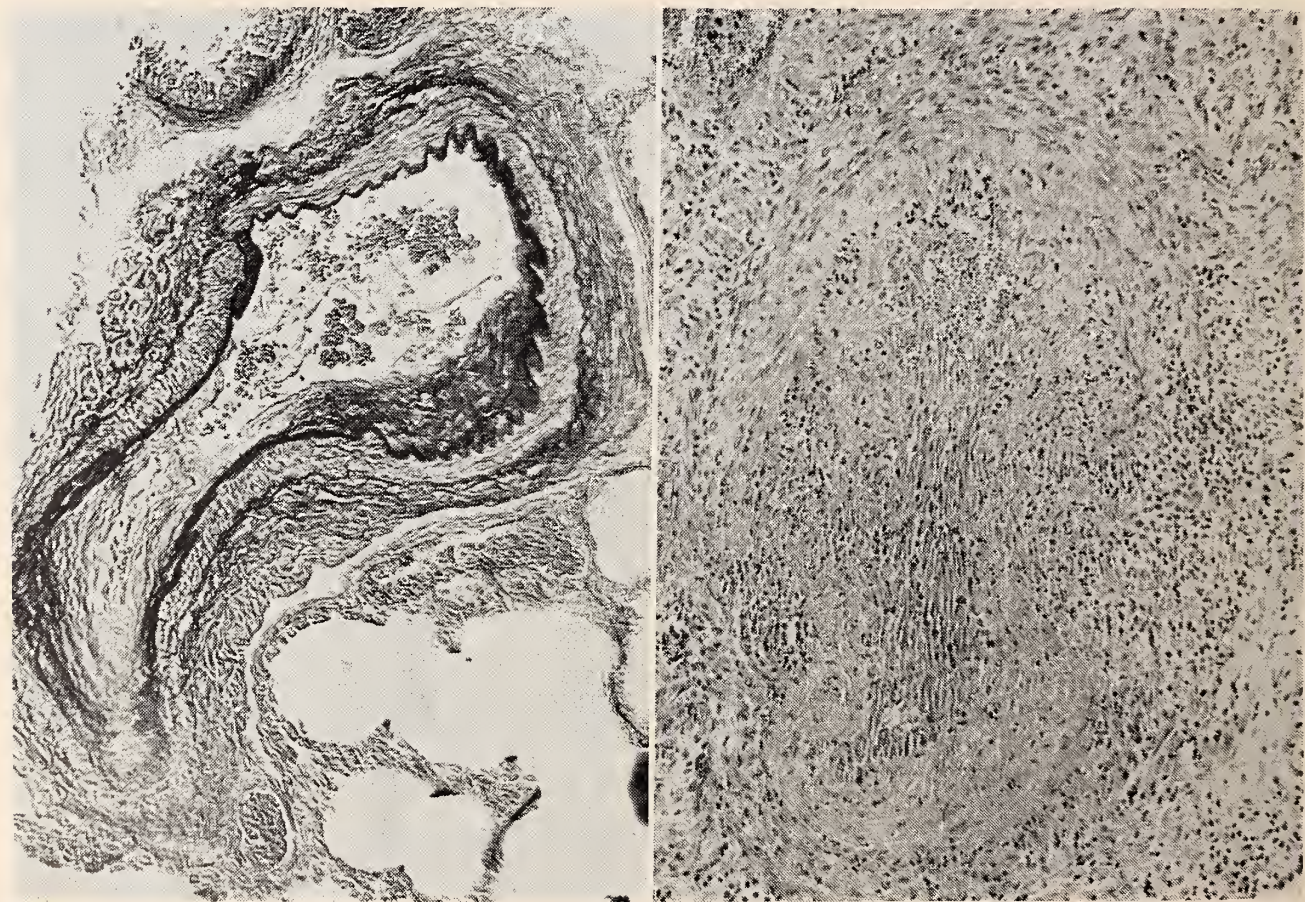


Fig. 4. Photomicrographs of small pulmonary muscular arteries in cases of large ventricular septal defect. LEFT. Non-specific intimal fibrosis of a branching vessel. Elastic Tissue Stain; X 100. RIGHT. Necrosis of all elements of arterial wall associated with leukocytic infiltration of all layers. Arterial necrosis is unusual in ventricular septal defect. H & E; X 95.



plexiform and dilatation lesions and arteritis (Figs. 4 and 5).

Atrial Septal Defect

WHEN an abnormal opening lies between the two atria the fundamental dynamics are different than when the opening is either in the ventricular septum or between the aorta and a pulmonary artery. In the latter two conditions the opening allows left ventricular pressure to be transmitted into the pulmonary arterial system. In atrial septal defect such transmission cannot occur, because the ventricles and great arteries are separated by the ventricular septum or by the vessel walls which divide them.

In atrial septal defect the classical situation during childhood and for varying periods into adult life is that large volumes of pulmonary flow are associated with normal or near normal levels of pulmonary arterial pressure (Fig. 6, *Left*). From this it may be concluded that the resistance offered to pulmonary flow is lower than normal. The pulmonary vessels are thin-walled and their lumens are wide. Intimal lesions are not present at this stage. In atrial septal defect there is, however, a tendency for pulmonary hypertension to complicate the picture at some time during adult life. As there is no evidence that a rise

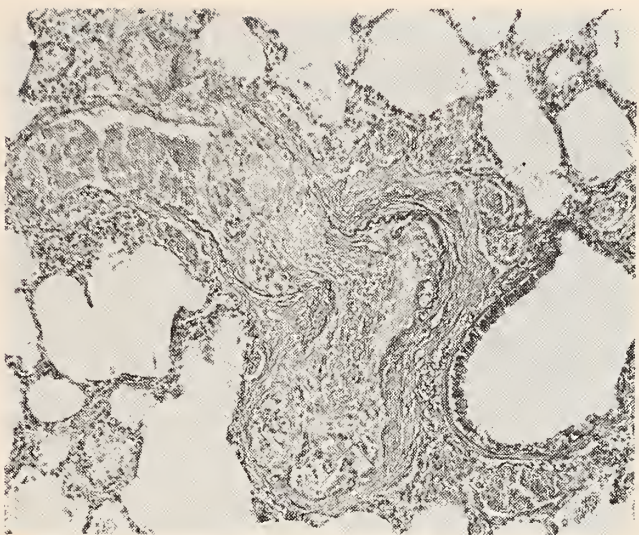


Fig. 5. Photomicrograph of muscular pulmonary artery in large ventricular septal defect. Plexiform lesions in 2 branches of a large muscular artery. H & E; X 100.

in pulmonary flow precedes this stage, it must be concluded that the elevation in pressure is a result of an increased barrier to flow. Histologic examination of the pulmonary arterioles and muscular arteries provides evidence for an increase in pulmonary resistance. When pulmonary hypertension becomes established and the right ventricular wall thickens a right-to-left shunt may appear (Fig. 6, *Right*).

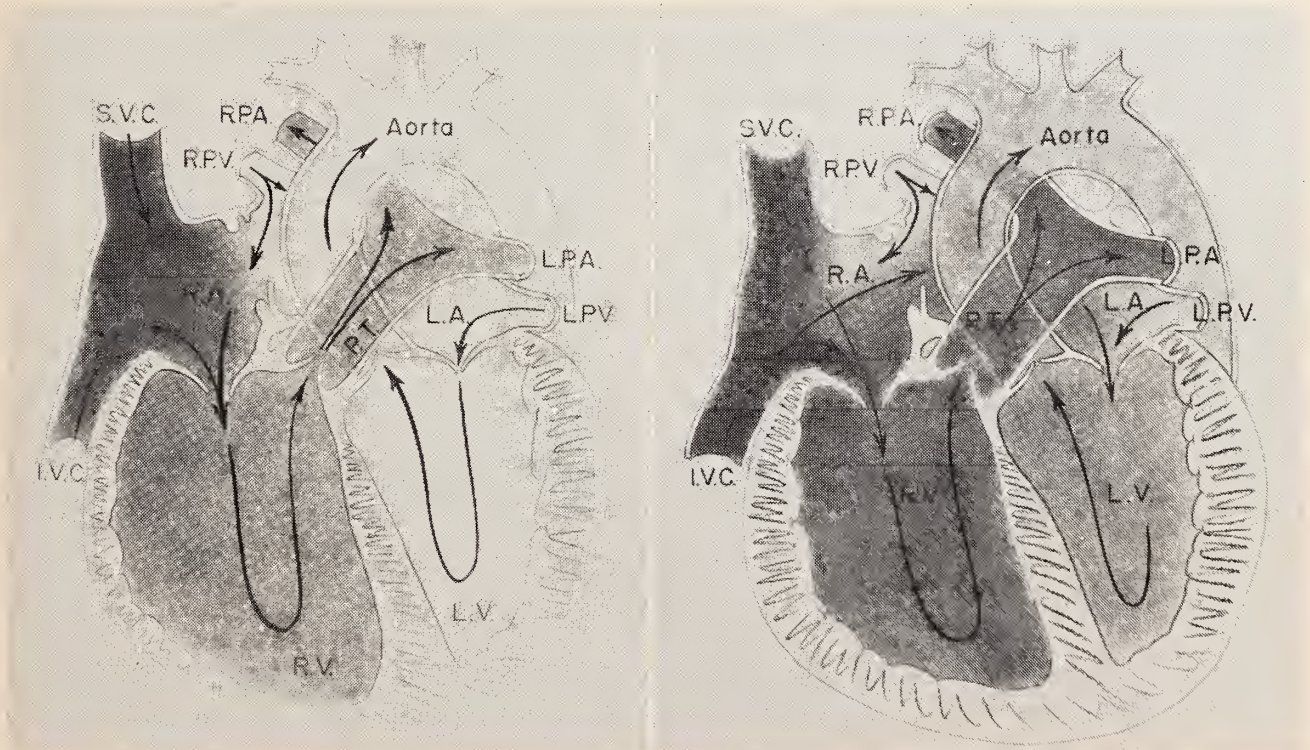


Fig. 6. Diagrammatic portrayal of two phases in atrial septal defect. LEFT. In the initial stages the pulmonary pressure is normal even though a large left-to-right shunt is present. RIGHT. As occlusive pulmonary vascular lesions develop, the pulmonary arterial pressure rises. A large left-to-right shunt usually continues, but a right-to-left shunt may become superimposed.



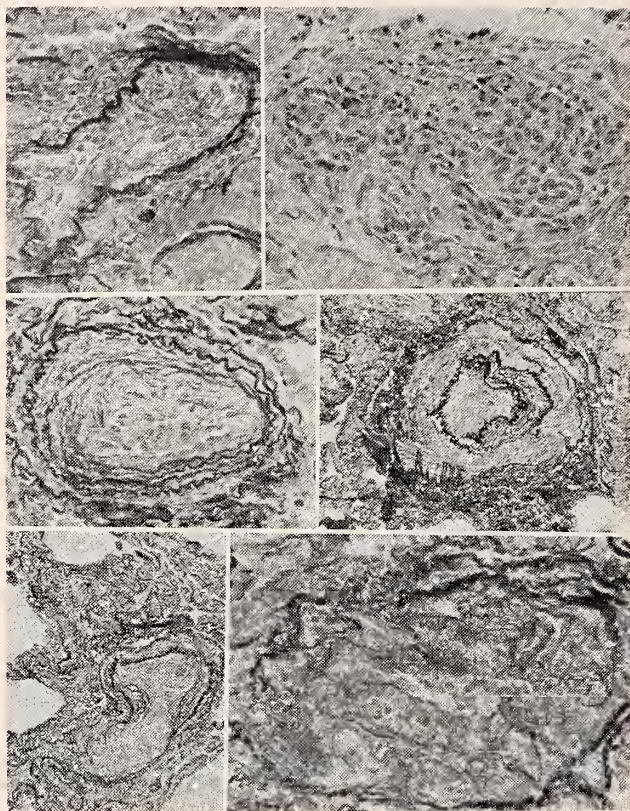


Fig. 7.

Photomicrographs of pulmonary arterial vessels in atrial septal defect with pulmonary hypertension. UPPER LEFT. Site of branching of a small arterial vessel. There is marked intimal fibrous proliferation causing virtual obliteration of the lumen. It is considered that this lesion represents the primary change leading to pulmonary hypertension in atrial septal defect. Elastic tissue stain; X 400. UPPER RIGHT. Small muscular artery. The lumen is filled with fibrous tissue. This is considered an early change in the lung of the patient with atrial septal defect and pulmonary hypertension. H & E; X 370. CENTER LEFT. Small muscular artery. The lumen is markedly narrowed by non-specific intimal fibrous thickening. Elastic tissue stain; X 340. CENTER RIGHT. Muscular artery. Predominantly the change in this vessel is medial hypertrophy. There is focal intimal thickening, as well. Elastic tissue stain; X 140. LOWER LEFT. A large muscular artery at its site of branching. The lumen of the parent vessel around the ostium of the branch is thickened with non-specific fibrous tissue. Beyond this, the branch dilates and the lumen contains a plexiform lesion. Elastic tissue stain; X 110. LOWER RIGHT. High power view of a small muscular artery at the site of its plexiform lesion. The vessel is dilated and the elements of the media are atrophic. Characteristic, frond-like protrusions of accumulations of cellular tissue into the lumen of the vessel causing the pattern of the plexiform lesion. Elastic tissue stain; X 400.

In atrial septal defect the primary structural change within the pulmonary vascular bed is characterized by non-specific thickening of the intima of small pulmonary arterial vessels<sup>15</sup>. Characteristically the intimal lesions occur at the junction of the muscular arteries and the arterioles (Fig. 7, *Upper and Center left*). During the period when the pulmonary vascular resistance is rising as a result of the occlusive lesions, the volume of pulmonary flow continues to be large and the pulmonary arterial pressure rises. As the pulmonary arterial pressure progressively rises, other arterial lesions make their appearance. The first of these is medial hypertrophy of the arterial system proximal to points of intimal thickening (Fig. 7, *Center right*). When the pulmonary arterial pressure rises to systemic levels, the characteristic lesions of sustained systemic-level pulmonary hypertension with typical plexiform and "dilatation" lesions appear<sup>9</sup>. At this stage the structural alterations become indistinguishable from the complicated picture that may develop in such conditions as ventricular septal defect or patent ductus arteriosus (Fig. 7, *Lower*).

### **Pulmonary Hypertension Without Increased Pulmonary Flow**

In the many conditions that are characterized by elevated pulmonary arterial pressure without

increase in pulmonary blood flow certain anatomic changes may be observed in the pulmonary vascular bed. These include luminal obstruction by foreign material, intimal fibrosis and medial hypertrophy. Any one of these changes may occur alone or in combination with the other two. Moreover, these changes may be associated with pulmonary parenchymal disease or pulmonary venous obstruction.

### **Pulmonary Vascular Disease Primary Luminal Obstruction Recurrent Embolism into Major Pulmonary Arteries**

The patterns of embolism to major pulmonary arteries vary. In some instances the event is rapidly fatal, while in others, the patient survives the attack. The embolus becomes organized and recanalized (Fig. 8) and may lead to the state wherein fibrous bands cross the lumina of large arteries<sup>19</sup> (Fig. 9). Non-fatal embolism to large pulmonary arteries has a tendency to recur over a period of months or years. Patients with the latter type of problem are of particular interest in this communication as they represent examples of chronic pulmonary hypertension. In these, the pulmonary blood flow is either normal or lower than normal, yet the pulmonary pressure is elevated. The appearance of pulmonary



hypertension in an adult patient *de novo* is always justification for suspecting the possibility of this condition. If the condition is recognized early enough and further pulmonary embolism prevented, some patients may tolerate the particular level of pulmonary arterial pressure attained. Unchecked, this condition may go on to such a severe degree as to cause the right ventricle to fail.

#### Thrombo-embolism of Small Pulmonary Arteries and Arterioles

This designation is applied to an insidiously progressive condition in which the smallest of arterial vessels are occluded by thrombi in various stages of organization. The condition differs from recurrent embolism involving large pulmonary arteries. Not only are there differences in the size of pulmonary arteries involved but there are other differences. Recurrent embolism to large pulmonary arteries may be attained by episodes from which a diagnosis of pulmonary embolism may be suspected clinically and clinical evidence of peripheral venous thrombosis may be encountered. In thrombo-embolism of the small pulmonary arteries and arterioles, the latter two features of cases with embolism to the major arteries do not usually apply.

Signs of progressive, and ultimately severe, pulmonary hypertension are shared by cases having thrombo-embolism of the small arteries with cases of primary pulmonary hypertension<sup>20</sup>.



Fig. 9.  
Interior of a major pulmonary artery. The vessel has been opened longitudinally. Crossing the lumen are several strands of fibrous tissue. These represent residua of a completely organized embolus.

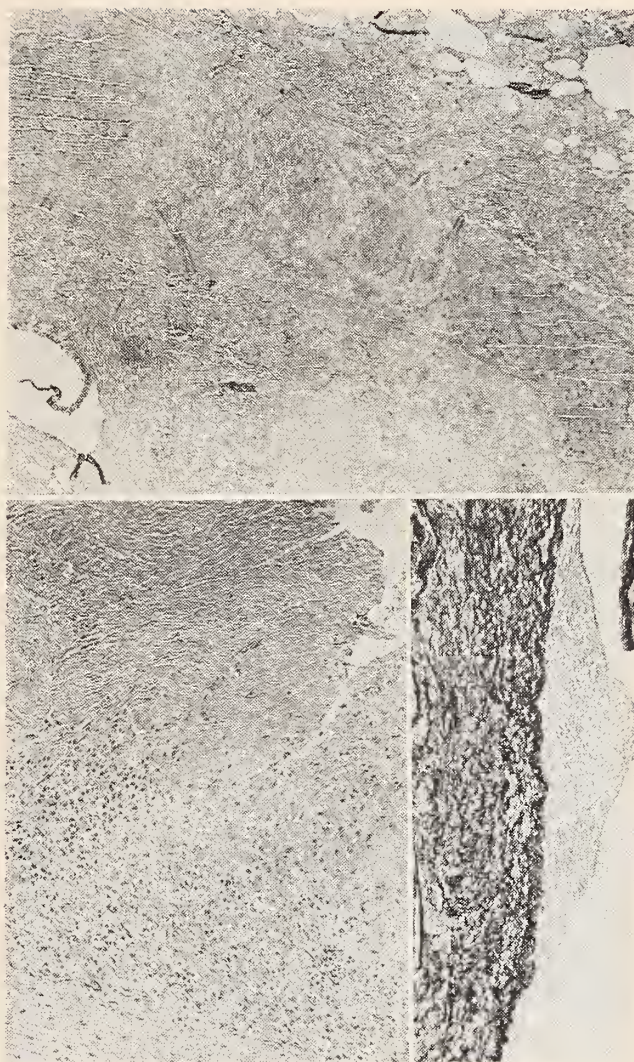


Fig. 8.  
Photomicrographs of pulmonary arteries in a case of recurrent pulmonary embolism to large and small pulmonary arteries. UPPER. A pulmonary artery and two branches are occluded by a recent embolus. H & E; X 32. LOWER LEFT. Wall of pulmonary artery and organizing embolus representing a later phase of embolism than that shown above. H & E; X 96. LOWER RIGHT. An elastic pulmonary artery. An intimal nodule represents a focus of organized thrombotic material probably related to earlier embolism. Elastic tissue stain; X 90.

The etiology of this condition is not understood. Also, as the name might imply, it is uncertain whether the thrombotic material present in the vessels arises *in situ* or whether it represents a process of recurrent embolism.

#### Metastatic Carcinoma

Metastatic carcinoma may cause an insidious form of pulmonary hypertension when extensive embolism of particles of tumor occur to the small arterial vessels of the lungs<sup>21,22</sup>. Common primary sites of tumor leading to metastatic carcinoma in the small pulmonary arterial vessels are the stomach, the breast, and the prostate gland. At the sites of lodgement of embolic



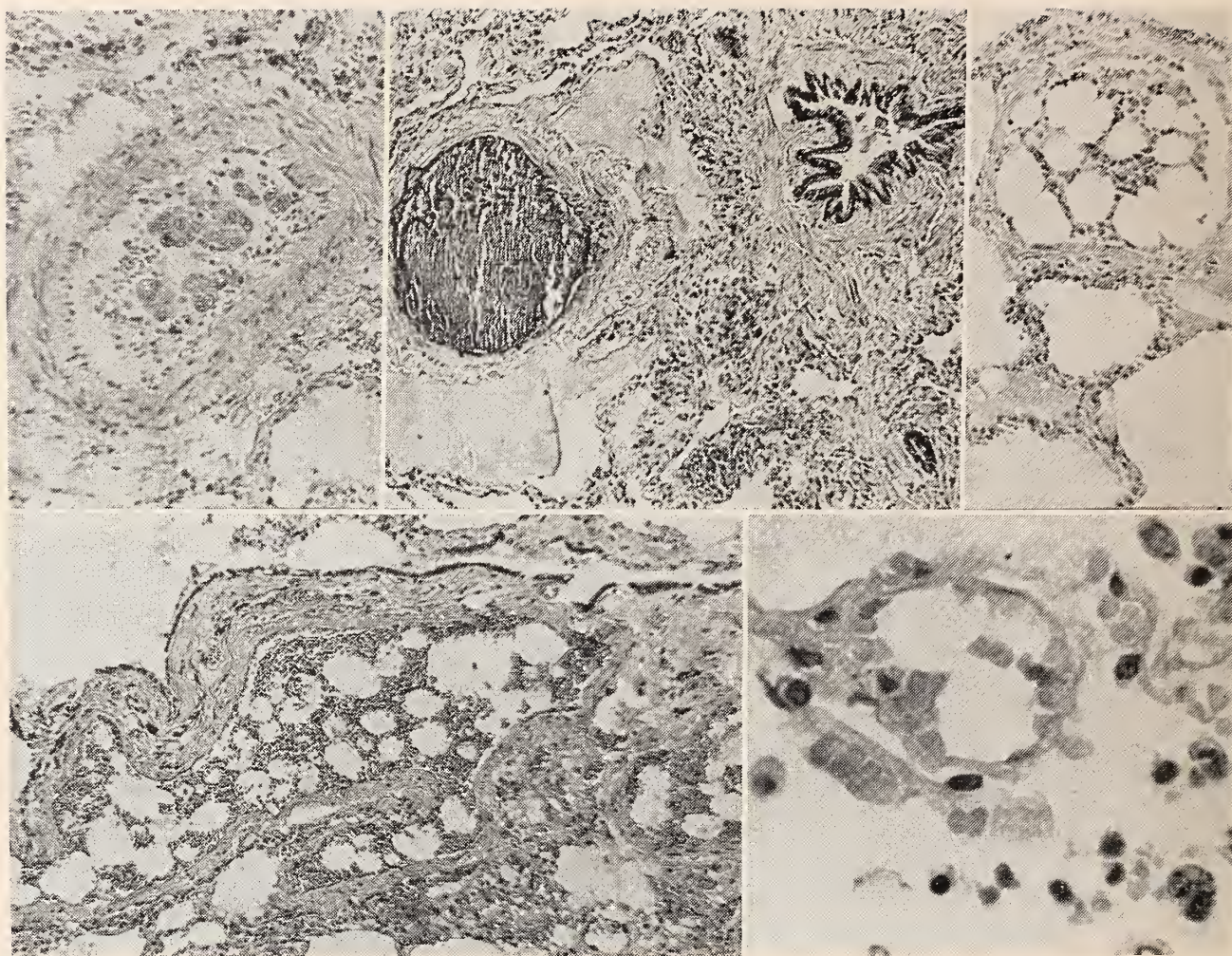


Fig. 10.

Several types of embolism involving small pulmonary arterial vessels. UPPER LEFT, Metastatic carcinoma from primary tumor of breast. The lumen of the artery contains clumps of carcinoma cells. This is representative of many of the vessels in this case in which the tumor emboli were not associated with secondary thrombosis. H & E; X 140. UPPER CENTER, Amniotic embolism. A pulmonary artery is filled by foreign material mostly mucous and debris. Mucous stain; X 100. UPPER RIGHT, Bone marrow embolism. A muscular artery is distended by an accumulation of hematopoietic and adipose tissue, having the characteristic structure of bone marrow. H & E; X 140. LOWER LEFT, Fat embolism. In a large muscular artery, the foamy appearance of the blood is a manifestation of the presence of particles of fat. Similar particles were present in smaller vessels, including the capillaries. H & E; X 100. LOWER RIGHT, A capillary is distended by clear material conforming to the pattern of droplets observed in other sections stained for fat. Obstruction of pulmonary capillaries is one of the features in fat embolism. H & E; X 570.

particles of malignant tumor thrombosis occurs. The thrombus may propagate and with organization of the thrombus at the site of tumor impaction the tumor tissue may be crowded out. As a result of either or both of these circumstances, individual sections of an occluded pulmonary arteriole may show only evidence of organized thrombus with no identifiable tumor. Usually, however, other vessels will reveal the presence of tumor and serve to identify the basis for the extensive occlusive pulmonary vascular disease. When tumor is identified in pulmonary vascular arteries and arterioles it is common that the lesions collectively will represent varying ages. Such observations support the concept that the embolism of particles of tumor occurs

over a period of weeks or months. In a rare case there may be widespread occlusion of small pulmonary vessels by particles of tumor but without associated thrombosis (Fig 10, *Upper left*). Such a phenomenon suggests that in some cases a massive shower of small neoplastic particles may occur at one time.

It is uncommon that the pulmonary hypertensive feature of metastatic carcinoma plays a dominant role in the clinical picture of the patient. When an association is recognized, dyspnea and sudden death are events attributable to this peculiar type of metastatic disease. Usually, however, the primary tumor and other metastatic foci serve to attract the attention of the clinician more than do the metastatic lesions



in the small pulmonary arterial vessels. It is to be recognized that this type of metastatic carcinoma need not be associated with any foci of metastatic carcinoma in the parenchyma of the lung. The thoracic roentgenogram may yield a normal picture with regard to the parenchyma while signs of pulmonary hypertension may be evident.

### Amniotic Embolism

Amniotic embolism is recognized as a complication of pregnancy occurring during labor. It is characterized by amniotic contents, including particles of fat, mucus and epithelial debris entering the maternal veins. Traveling within the mother's vascular system this foreign material lodges in the pulmonary arterioles and small arteries (Fig. 10, *Upper center*). In established cases death occurs shortly after the appearance of symptoms of pulmonary vascular obstruction. It is evident that in the classical case of amniotic embolism the problem of pulmonary hypertension occupies a very short period of time.

The question remains as to whether these are examples of amniotic embolism which do not follow the rapid and fatal course of the classic case. Usually in biologic material, mechanical problems, such as vascular obstruction, are represented by many gradations if one views a sufficiently large sample of subjects. It therefore seems probable that non-fatal cases of amniotic embolism may occur. If this is so, there may be women who have suffered such a minor degree of the process that they have not manifested any measurable disturbance of the circulation. Others, perhaps, experience chronic pulmonary hypertension. Where then, are these cases? One is immediately led to wonder about the cases of thrombo-embolism of small pulmonary arterial vessels and about those examples, yet to be considered, of so-called primary pulmonary hypertension<sup>23</sup>. Attempts to identify amniotic elements in the pulmonary vascular bed in cases of chronic pulmonary hypertension have so far been unsuccessful. Before leaving this hypothetical problem it might be anticipated that over a period of time amniotic emboli might stimulate the formation of thrombi and themselves disintegrate so as not further to be recognized.

### Embolism of Fat or Bone Marrow

Embolism of fat and/or bone marrow<sup>24</sup> to

the pulmonary circulation is a recognized complication of fractures, particularly of the long bones and in this problem embolism of fat is usually the dominant of the two (Fig. 10, *Upper right* and *Lower*). Surgical manipulation of adipose tissue may also lead to fat embolism. In fat embolism some of the globules of fat are sufficiently small as to pass through the pulmonary capillaries and ultimately to lodge in capillaries of various organs, including the brain, retina and kidney. Non-fatal fat embolism is probably very common. In fatal cases the element of obstruction of cerebral vessels appears more important than pulmonary vascular obstruction. Lodgement of fat globules in the vessels is not ordinarily attended by thrombosis. With time globules of fat (not particles of bone marrow) are removed from these sites of lodgement. These circumstances probably explain the phenomenon that fat embolism is not usually an underlying factor in chronic pulmonary hypertension. Rarely, if ever, is embolism of bone marrow sufficiently extensive as to cause chronic pulmonary hypertension.

### Parasitic Disease

Parasitic disease does not play a major role among causes of pulmonary hypertension in this country but it is an important problem in those geographic areas where such conditions are common. The classical example of this problem is bilharzia wherein ova lodge in small pulmonary arterial vessels. These bodies and the thrombi that they stimulate to form may cause extensive pulmonary vascular obstruction<sup>25,26</sup>.

### Primary Intimal Disease

Within the framework of the classification used here primary intimal disease is the least common variety of pulmonary hypertension. This is seen in both pulmonary arteritis and in an idiopathic phenomenon, so-called primary pulmonary hypertension.

### Pulmonary Arteritis

In any state of existing pulmonary hypertension, possibly at times of peaks of elevation in pressure, acute necrosis and secondary inflammation may become evident in the small pulmonary arterial vessels<sup>27,28</sup>. Also, arteritis may follow lodgement of septic emboli or it may be a complication in areas involved by granulomatous disease. Pulmonary arteritis may be a feature of



systemic periarteritis nodosa. In other cases, arteritis restricted to the lung may be a peculiar manifestation of a hypersensitivity state<sup>29</sup>.

The lesions contribute to increased vascular resistance in several ways, the most prominent of which is intimal thickening through the cellular infiltrate of the acute stage or the fibrosis of the healed one. As the medial layer is often necrotic, malfunction of this layer may perhaps be a contributing element to increased vascular resistance.

## Primary Pulmonary Hypertension

Pulmonary hypertension rarely occurs without any associated change or circumstance that might explain the process. In cases of this type the term *primary* or *idiopathic pulmonary hypertension* is applied<sup>30-36</sup>.

In some instances, particularly in adults, one may recognize an intimal disease of the arterioles. This is characterized by non-specific fi-

brous thickening of this layer. No thrombi are associated. Vessels which lie proximal to the obstructed arterioles show medial hypertrophy. The latter process may be considered to result from elevation of the pulmonary arterial pressure caused by the arteriolar disease. Once established, medial hypertrophy may contribute to increasing vascular resistance. Moreover, when the pressure rises to levels which usually prevail in the systemic circulation, plexiform lesions and arteritis may appear and further compound the high levels of pulmonary vascular resistance.

Rarely, children are affected with pulmonary hypertension of idiopathic nature. In these, the primary change appears to be one of medial hypertrophy which possibly represents a retention of a fetal-type of pulmonary vessels<sup>37</sup>. Such cases bear structural similarity to the changes in high altitude residents but, as yet, no explanation for the stimulus to retention of medial hypertrophy has adequately been advanced.

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# Low Backache In Women: A Gynecological Problem?

by

George H. Gardner, M.D.

Low backache is rarely a gynecological problem but some pelvic pathology can be a contributing factor to this common complaint of women.

**M**Y PRESENTATION this morning may call for a word of explanation. No one, and I mean just that, *no one* would classify it as a scientific discourse or as a something that is truly erudite. Yet you must believe me that it has a story to tell — a message for each of you, and one which is simplicity itself, in its application, and one which should prove invaluable to each of you in your every-day practice — Yes, probably invaluable to you, everyday, since all of you are practitioners of Obstetrics-Gynecology.

May I remind you that every physician whether in full-time private practice, whether full-time on the faculty of a Medical School, or whether, as is true with those of us from Northwestern, in private practice devoting much of our time to academic medicine, but as volunteer members of the Faculty in the Dept. of OB-GYN, I repeat, all of us, and of all categories, have a three-fold responsibility to our profession, to our specialty, to womankind and to ourselves, namely — to become as expert as possible in the art of clinical practice; to pass on to others — patients, nurses, house-officers and other physicians, what we have learned ourselves thru reading, thru observation, thru years of experi-

ence — and that is teaching; and, finally, to increase the sum total of knowledge in Medicine, but especially in our specialty, thru observation, basic studies and experimentation — and such is research.

However, most of us seem to believe that research is limited to activities in the laboratory, that it can only be productive when these activities involve test-tubes and laboratory animals; apparently, we have forgotten that clinical application is the “proof of the pudding” for all basic research and that keenness in observing, objectivity in drawing conclusions, and great care in reporting, are fundamental aspects of every type of research. And that includes clinical investigations — a type of research which is available to all of us, and a type of activity in which all of us should engage much more actively, if for no other purpose than, simply because everyone who does so will be a far better clinician because of such work — the man who does the investigation stands to profit most from his studies. Who is there to doubt that the day each of us entered on the study of Medicine, on that particular day he dedicated himself to a life of constant study, since Medicine presents an ever changing panorama of progress, of advancement, of change — and the physician who stops studying, is dead — at least he is dead professionally, and one truly to be pitied.

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**H**ENCE, my presentation might possibly be considered scientific since it is based on study and practice; at the same time it may be solely empiric, since it is based on continued observation and increased experience. For sure, it has resulted solely from a clinical investigation of an every-day problem.

**T**HIS MORNING I wish to discuss the differential diagnosis of low backache, to be sure from the point of view of a gynecologist; and, at the same time, present a practical and logical approach to the problem, which, in my own experience at least, has yielded a high percentage of correct evaluations regarding its cause. Obviously no backache can be treated effectively, until the factors responsible have been determined.

Too many physicians, both in and out of our specialty, are of the opinion that low backache frequently results from some disease process in the pelvic organs. Furthermore our patients add to the confusion, both while we take their histories and as we examine them, since they, themselves, are convinced that their backache is caused by trouble with their "womb," and thus attempt to focus our attention on the generative tract, as we search for its cause. *A word of caution*, patients with low backache must be approached with one's "eyes wide open," and with this basic premise constantly in mind, viz. *low backache is rarely a gynecologic problem*. One should never lose sight of this fact, if he expects to avoid frequent errors in diagnosis, if proper therapy is to be instituted, and if our prescribed program of management is to be effective. Furthermore, I am impelled to emphasize that this premise — "low backache is rarely a gynecologic problem" is equally true, and just as pertinent, even though the backache started during pregnancy, was first noted shortly after delivery, or is markedly accentuated during menstrual periods; and it is especially true in the woman with gross genital pathology which cause other symptoms, and which need to be corrected.

Too often we apparently forget that the back itself undergoes unusual and rather extreme degrees of stress and strain during pregnancy, thanks to several physiological factors, namely: alterations in posture, necessary to compensate for the rapidly growing abdominal tumor, and softening of the ligamentous structures of the bony pelvis. We are also prone to forget that,

during labor, particularly prolonged labor, the back undergoes further strain; especially is this true when there is long-continued general anesthesia, during which no one gives thought to positioning the patient properly on the delivery table. Furthermore, it isn't just the patient, herself, who ascribes so much responsibility to the pelvic organs as the true cause of symptoms that are aggravated during menstruation. The mere fact that a woman's backache is markedly aggravated at "that time of the month," in no way actually incriminates the uterus, tubes or ovaries as its cause. Any discomfort, irrespective of its location or cause, is likely to be exaggerated before and during menstrual periods, simply because women are more sensitive then, both to physical pain as well as to emotional trauma, and not because there is any feature of menstruation which actually intensifies, or directly affects the true cause of a backache.

**M**AY I REPEAT, *pelvic disorders are, oh so rarely, the cause of low backache*. Consequently the burden of proof rests on anyone who insists that they are at fault. All too often, much needed and carefully performed gynecological surgical procedures are followed by persistence of the backache, much to the chagrin of the doctor, and the disgust — frequently vocal, and often vociferous — of the patient.

Please do not misunderstand, I realize full well that the pelvic organs, on rare occasions, may be responsible, either directly or indirectly, for backache. This is true when genital pathology is a major factor contributing to the patient's poor general health, as, for example, with extensive childbirth relaxations associated with marked descensus of the uterus, or when uterine myomata cause prolonged gushing menses and a progressively severe anemia. Under such conditions, the low backache is most likely a fatigue phenomenon, and the genital pathology may indirectly contribute to an inadequacy of the muscles and ligaments of the back, although such can hardly be considered the agent, that is *directly* responsible for her backache.

Furthermore, it was once believed that certain genital lesions, conceivably, could become a precise focus-of-infection responsible for systemic disease, such as arthritis; and who is there to doubt that arthritis of the spine is one of the most frequent causes of low backache. But that was before the era of potent antibiotics which



of themselves, have practically eliminated the whole concept of foci of infection as the cause of any of the present-day human ailments. In my own thinking, even before antibiotics were available, there was very little to prove that the genitalia were of any great import as foci of infection. One could imagine that a persistent, hence a chronic abscess might be incriminated, such as a suburethral abscess, or a pyometra, or an ovarian or tubo-ovarian abscess. On the other hand, there were those who viewed the healed residues of a pelvic infection and chronic cervicitis as such foci and this was a point of view that never had any appeal for me and never seemed to have any sound basis for serious consideration; nowadays, thank goodness, antibiotics have effectively terminated the whole idea of foci of infection.

A THIRD type of low backache indirectly due to genital pathology, or at least to a cessation of ovarian function, is that form of arthritis, more correctly termed arthralgia which occurs at the menopause, apparently from some metabolic disorder, although this is merely an opinion and one that can not be documented or substantiated by facts.

There are also a few gynecologic disorders which may be *directly* responsible for low backache, for example: incarcerated benign tumors, such as myomata and ovarian cysts. These tumors may become adherent when complicated by residues of a previous pelvic infection, or when accompanied by pelvic endometriosis. They give rise to a pelvic aching discomfort, but never to a backache associated with point tenderness over the vertebral bodies, or along the paravertebral muscles.

Another genital cause is invasive cancer, particularly spreading cancer of the cervix, although cancer of the endometrium and cancer of the ovaries on rare occasions may also give rise to a severe form of back pain; under these conditions, however, the backache is only one other manifestation of generalized pelvic distress; cancer pain is excruciating and it often radiates into the legs; it is likely to be lancinating in character, and tends to be worse when the patient is quiet, is trying to relax, and is endeavoring to rest.

In attempting to determine a cause for the various forms of low backache, I am convinced that a carefully elicited history is of tremendous as-

sistance in arriving fairly promptly at the correct diagnosis. In the first place, it would only be logical to inquire about the exact *location* of the backache; any backache that is not limited to the sacral and lumbosacral regions but also occurs over the upper lumbar and thoracic spine, is not caused directly by genital pathology. Furthermore, when there are other evidences of arthritis, notably in the hands and fingers, one should beware of blaming the genitalia for a low backache. Next, one should inquire about the *nature of the ache*; e.g., is it a dull affair, that bothers only toward the end of the day, is relieved by bed rest, and is absent the next morning? This suggests muscular insufficiency and poor posture. Or is it a sharp distress that occurs periodically in attacks, and is accompanied by a painful stiffness of the back that persists for days or weeks, after which all of the pain and stiffness disappeared completely. Such a history suggests myositis, the so-called lumbago. Or is it a severe, constant, boring and excruciating pain from which the patient never escapes; this type of pain suggests cancerous invasion of soft tissues, and metastases to bones.

It is also important to determine *when the backache started*; remember, just because it began during a pregnancy, or during the puerperium, in no way incriminates the genital organs. If it started after an injury, such as a fall or a blow, the genitalia are not likely to be at fault. If it started as a phase of a systemic infection, it probably is only one other manifestation of a polyarticular arthritis.

FURTHERMORE, it is important to inquire *when it occurs*; i.e., is it constant, as one would expect from either invasive cancer, or an incarcerated tumor; or it is present on arising, so that the patient literally has to roll out of bed, but tends to subside after a few hours as she becomes more active; this is the type of backache characteristic of hypertrophic arthritis. Furthermore, one should know whether it is a backache that occurs towards the end of the day, when the patient is tired after she has been on her feet and working for hours, because this type of backache is usually caused by muscle insufficiency, and is relieved by rest. On the other hand, a backache that occurs at the time of menstruation, *and only at that time of the month*, may actually be caused by genital pathology. However, any type of discomfort is likely to be



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much more annoying before and during menstruation, because at that time a woman is much more sensitive.

Next, it is advantageous to inquire if any particular activity tends to *aggravate the backache*. For example, is it an ache that occurs only at the end of an unusually long and trying day, or is it a sharp pain that occurs on sudden change in position, such as arising after having been seated for some time, or in bending over to pick up something from the floor. When fatigue, or sudden change in position, induce or aggravate a backache, one can be almost certain that the fundamental cause is an orthopedic problem, and not one for the gynecologist.

Equally pertinent are the factors which tend to give relief. When bed-rest, heat and salicylates are effective, in all probability the patient needs the assistance of an orthopedist, and the problem is far removed from the domain of gynecology. The same hold true when proper posture, good corseting and shoes with adequate support are beneficial.

It must be apparent that a few well-chosen questions as one elicits the history not only give insight into the type of backache with which we are dealing, but in fact almost make the diagnosis; thereafter it can usually be substantiated rather promptly by the physical examination.

**T**OO OFTEN gynecologists are so intent on determining the status of the genital organs, that we actually omit doing any semblance of a general physical examination; how short-sighted, but a fault that is common to most specialists. Certainly the least we can do for these women is to inspect their backs, and make some pretense of looking for gross abnormalities and deformities; we should also palpate, in a search for points of tenderness. The woman with marked scoliosis, or an abnormally exaggerated lumbar lordosis, is more likely to have muscle insufficiency and back strain than the woman with perfect posture, and no deformities of the spine. By the same token, points of tenderness over the spine and its adjacent musculature bespeak a local, not a genital, cause for the backache.

Now let us be more specific, and consider some of the frequently encountered lesions of the female genital organs, in an attempt either to incriminate them as the cause for a low back-

ache, or exonerate them from direct responsibility for this symptom. Again let me remind you, that the information gleaned from questioning the patient about details of her backache helps tremendously in the interpretation of cause and effect relationship between genital pathology and back pain. I repeat, you must know where the backache is located; what are its characteristic features; when it started; when it occurs; what aggravates it; what relieves it; is the back stiff; and are there points of tenderness, either over the sacrum, the vertebral bodies or the paravertebral muscles.

**C**HRONIC cervicitis is not a *direct* cause of low backache, and rarely can it be considered an indirect cause either. This is true even though the cervicitis gives rise to a profuse mucopurulent discharge, and is complicated by lacerations, erosions and eversion. The cervix is not a focus of infection responsible for systemic disease, and palpating the cervix *per se* does not cause discomfort. If pressure against the cervix is painful, one should assume that there is upper genital pathology, usually in the adnexa or the uterine supports. Many of my friends speak quite glibly of the cervix as a cause of backache; probably because they consider it a frequent focus of infection, from which pathogenic bacteria spread into adjacent structures such as the uterosacral and cardinal ligaments, after which there is a retroperitoneal inflammatory process which extends to the bony pelvis. All of this seems highly theoretical, and, for practical purposes, we must exonerate the cervix from responsibility for low backache.

Already we have mentioned that uterine myomata may contribute to low backache: *indirectly*, when they cause gushing menstrual periods, and as a result give rise to a progressive anemia. Backache under these conditions is likely to be of the fatigue type which appears after activity, is relieved by rest, and disappears after hysterectomy when both the general health and the blood counts have been restored to normal. Myomata which are intraligamentary and in consequence incarcerated, or are relatively large and adherent, may be a *direct* cause of backache. Under such conditions one would expect the backache to be low, constant, essentially unaffected by physical activities, and markedly exaggerated at the time of menstruation. Furthermore, no one can doubt that these



tumors are the direct cause of backache, if pressure against the tumors and attempts to lift them, either produce or intensify the identical pain and low backache of which the patient complains. In general, however, myomata bear no relation to low backache; especially is this true when the tumors are freely movable, when moving the tumors causes no discomfort, and when the pain produced by attempting to lift, or move them, neither resembles the backache of which the patient complains, nor intensifies it.

All that has just been related about incarcerated and adherent myomata, also applies to ovarian tumors. However there is an additional way in which huge myomata and ovarian cysts may contribute to backache. I refer to tumors of the size which we rarely see anymore, i.e., those which fill the abdomen and approach or exceed the size of a term pregnancy. Consciously, or unconsciously, the woman is likely to make postural compensation for the marked enlargement of her abdomen, and thus puts unnatural strain on the musculature of her back. Of course it is to be expected that removal of such an enormous tumor would result in prompt recovery from this type type of backache.

**F**AR-ADVANCED cancer of the cervix, either through local extension laterally or by metastases, causes constant, boring, excruciating backache, and pelvic pain. In an untreated, or an inadequately treated cancer of the cervix one finds a characteristic fetid, bloody vaginal discharge, a craterous cervix with cartilaginous margins, and stony hard induration of the parametria, with marked fixation of all pelvic tissues. Pressure against such a process reproduces, or intensifies, both the pelvic distress and her backache. This, however, is not the type of patient in whom one is likely to encounter metastases to bone; they die too soon. Bone metastases are rare and are found in those terminal cancers who have had treatment which temporarily arrested the local growth, but failed to prevent its continued slow process. Consequently they give history of cancer treatment, after which there was cessation of uterine bleeding, disappearance of vaginal discharge and comparatively good health for a number of years. Later they started to go down-hill, lose weight and suffer pain, but may never have had a recurrence of bleeding and discharge. In fact the cancer may remain cryptic, and the vaginal vault look in-

nocent. Metastases to the bony pelvis and spine should be suspected because of the past history, especially when there are points of exquisite tenderness over the involved bones; metastases can be proved, however, only with x-ray films.

Previous comments regarding the characteristic pain of terminal cervix cancer are equally applicable to terminal cancer of the corpus, and cancer of the ovaries.

Healed residues of a previous pelvic infection, such as an adherent retro-displaced uterus, hydrosalpinges, adherent inflammatory cysts of the ovaries or adherent tubo-ovarian inflammatory cysts, are rarely, if ever, responsible for low backache. An ovarian abscess, or tubo-ovarian abscess, may be a focus of infection; but healed residues are bacteriologically sterile, and consequently never could be a focus responsible for systemic disease. One should expect that palpating or attempting to lift such adherent structures will cause discomfort. However, in order to be certain that they are causing the backache, one must find that attempts to move or lift these lesions actually reproduce, or intensify the backache. This rarely occurs, and in our experience upper genital residues of a previous pelvic infection are an inconsequential factor in the causation of low backache.

**T**HE SAME holds true for pelvic endometriosis, which is often accompanied by pelvic pain and severe dysmenorrhea, but it rarely causes backache. Pelvic endometriosis is recognized with comparative ease, when there is an adherent retroflexed uterus and adherent tender adnexal masses, but especially when one finds the characteristic fixation and finally nodular thickenings in the uterosacral ligaments, and the rectovaginal septum. In fact these tell-tale nodules behind the cervix may be the only evidence of endometriosis detected on bimanual examination. Although palpating lesions of endometriosis is usually painful, and it is almost pathognomonic for this pain to be referred to the adherent rectum, nevertheless it is rare, indeed, for these women to recognize that their backache is aggravated or even intensified by bimanual vaginal or rectovaginal examination.

It is most unfortunate that so many women have been subjected to suspension operations for so-called "correction" of an uncomplicated retrodisplaced uterus. Isn't it difficult for you to understand how a freely-movable retroflexed



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uterus ever could cause backache? In case of doubt one can always resort to a therapeutic test with a pessary; because we are justified in assuming that a retroflexed uterus is responsible for those symptoms which disappear while it is being held upright, and recur after the pessary has been removed. Certainly every woman is entitled to such a therapeutic test before being subjected to a suspension operation; and it is also almost a certainty that there would be damned few suspension operations, if preliminary tests with a pessary were adopted as a routine, as they should be. I can't tell you when I last saw a patient who needed a therapeutic test with a pessary or a suspension operation.

**F**INALLY, we come to that large group of multipara where most of us encounter greatest difficulty in determining the relationship of obvious genital pathology, to low backache. May I repeat, a carefully elicited history which includes a few pertinent questions, yields extremely helpful information relative to the exact nature of all backaches. However, multipara have so many potential causes for backache — first, their backs have been subjected to repeated strains, not only by multiple pregnancies but also by multiple deliveries. Next, they are likely to be dead-tired most of the time, due to their never-ending job of raising a growing family — hence, the fatigue factor enters into the problem. Third, they are likely victims of arthritis, since each pregnancy exacts its toll from their teeth, and because they are prone to neglect their own health while diligently providing for the welfare of their children. Finally, they have all degrees of cystocele, rectocele, cervical lacerations with or without infection, to say nothing of relaxed uterine supports with retrodisplacements, descensus, and even prolapse of the uterus. Obviously all of these lesions may contribute to fatigue, and thus indirectly cause or intensify a low backache. However if this genital pathology actually causes the backache, one should observe that lifting the uterus, or making strong tenaculum-traction on the cervix, will either induce or intensify the identical back pain of which the patient complains. Usually, however, one will find that these maneuvers cause pelvic discomfort, but it is not referred to the back. Consequently, in actual practice, it is rare to find that even *marked* childbirth lacerations and relaxations, actually cause low backache.

To all of this you may say: "Much ado about nothing. What difference does it make; those gross genital lesions are responsible for certain ones of the patient's symptoms, and should be corrected. Possibly the backache too will be relieved. Many other women have felt as good as new, after their operations." For the sake of argument I will grant all of your contentions, but I must take definite exception to your philosophy. We should manifest sufficient pride in our diagnostic acumen, and in our therapeutic integrity, first to attempt to determine the causes for all of the patient's symptoms, and then to rectify all of her physical problems, not just a portion of them. Second, the patient and her family are entitled to know what therapeutic benefits can be expected from the proposed treatment. Third, the logical time for them to be told that the operation will probably not benefit, or possibly will not benefit her major complaint, namely her backache, is *before, not after* the surgery. If all of us would be a little less expansive in our preoperative promises, we could spare ourselves much embarrassment, and our patients many disappointments. Actually there is very little that a gynecologist can do, either to alleviate or relieve low backache.

**M**AY I relate the story of a patient recently seen in consultation; it illustrates several of the more pertinent points which I have attempted to emphasize: Mrs. W. N., age 43, para IV, gravida V, complained of backache; located in the sacral region; present for several years, and gradually becoming more intense; aggravated by work, by fatigue and by systemic infections such as colds; frequently accompanied not only by tenderness in the back but also by stiffness, especially on arising. Vaginal examination revealed a parous outlet; a small rectocele; a well marked cystourethrocele which was responsible for some stress incontinence of urine; a normal cervix; a generous sized, freely movable, retroflexed uterus; normal adnexa; no pelvic tumors; no vaginitis, and no vaginal discharge. Moving the uterus caused discomfort, but it did not reproduce the backache. She had sufficient descensus of the uterus to permit the cervix to be pulled to the introitus, and although this procedure was uncomfortable, *it did not reproduce or intensify her back pain*. Obviously this backache was not a gynecological problem, and although there was gross genital pathology,



it in no way was responsible for the backache. As confirmation, may I report that x-ray films revealed a high degree of vertebral osteoarthritis, and that the patient is responding nicely to medical management.

In conclusion, a few words of caution: 1) Point tenderness over the spine, or adjacent musculature, bespeaks a local problem in the back; and speaks volumes against the genitalia as the cause of a backache. 2) Difficulty in bending over, or straightening into an erect position, bespeaks an orthopedic problem; the same is true for a backache which occurs in acute exacerbations, followed by months of complete relief from pain. 3) A therapeutic test with a pessary gives valuable information in determining what symptoms, if any, are caused by a retroflexion of the uterus. 4) Pregnancy and labor are often responsible for back strain. 5) Any pain, anywhere, and irrespective of its cause, is aggravated at the time of menstruation. 6) A carefully elicited history, intelligently

correlated with the findings on bimanual examination, should make it fairly simple to accurately predict the true relationship of the pelvic organs, to any woman's backache.

In case of doubt, play safe. Seek the assistance of an orthopedist; and never be so stupid as to promise complete relief from backache by the correction of gross genital pathology, irrespective of what other symptoms may be caused by these genital lesions. Finally, although it is prudent to explain all symptoms on the basis of a single diagnosis, there is one outstanding exception in gynecology to this general rule; this has to do with determination of the cause for a low backache. Too often physicians are embarrassed, and patients are sadly disillusioned, when an operation for correction of genital disease is eminently successful, but the backache is not relieved.

May I repeat, and I trust you will come to agree, *low backache is RARELY a gynecologic problem.*

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## EXCESSIVE PREOCCUPATION WITH SAFETY?

There can be little doubt that the drug amendments of 1962 were passed to protect you and the public from harmful drugs. I am afraid, however, that the Congress and the public expect more than this or any law can deliver and, as I have said before, as long as we have drugs, as long as we have airplanes and even bicycles, we will have accidents and the development of flaws that only time and wide-spread use will uncover. There is a hazard in everything we do. It is right that we should take all reasonable steps to minimize these hazards; but, in the field of drugs, trying to look at it objectively, I think we are entering an era in which we are excessively preoccupied with safety. The pendulum has been given a hysterical push. It can seriously interfere with the more important objectives of providing the tools to alleviate the ills that still afflict mankind. If we fail in this endeavor, we can lose more than we gain; and, as Alfred North Whitehead so wisely said, "Panic of error is the death of progress." — Theodore G. Klumpp, M.D., in *Illinois Medical Journal*, October 1963.



# Scrotal Cystocele On Excretory Pyelogram

by  
M. L. List, M.D.



Dr. List

Interesting information, presented in pithy form, is refreshing. For those who might wonder about the value of an upright roentgenogram, to include the pelvic area, as part of a urographic procedure, this fine demonstration should be a suitable answer.

With regard to terminology, this reviewer would plead for discarding such terms as "intravenous pyelography" and "excretory pyelography" for the more accurate and equally brief term "excretory urography."

**U**RINARY bladder herniation into inguinal hernia is estimated at 1 to 3% of all inguinal hernias. Descent of the bladder into the scrotum is considered rare. In 1951, Levine<sup>1</sup> reported finding 30 cases in the literature and added two of his own.

In 1953, Scardino and Upson<sup>2</sup> reported a case showing the herniated bladder in the scrotum, demonstrated by means of a cystogram. The present report is prompted by the fact that scrotal hernia of the bladder was demonstrated incidentally and somewhat accidentally at the time of excretory pyelography.

## Case Report

F. J., a 68 year old male, was seen initially at Maricopa County General Hospital in April of 1962 for hematuria. Blood and urine studies were essentially normal at that time. In May it was noted that the patient had no difficulty urinating a stream "larger than a pencil." On examination the prostate was found to be enlarged, approximately 5 x 5 x 5 cms.; 110 cc. of urine was voided and a residual of 30 cc. was obtained and was clear in color.

On June 1st excretory pyelography was performed and demonstrated the prostatic enlargement on the 10 minute film (Fig. 1, A). At 15 minutes, in the erect position, the film included the scrotal area and showed dye in the herniated portion of the bladder on the left, in a scrotal hernia (Fig. 1, B). The patient has refused to return for further evaluation.

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Medical Center X-ray and Clinical Laboratory, 1313 North Second Street, Phoenix 4, Arizona.



Fig. 1, A. — Excretory Pyelogram, 10 minute film, Prostatic Hypertrophy.



Fig. 1, B. — 15 minute erect film, dye in Scrotal Hernia on the left.





Dr. Walske



Dr. Moschel

## Newer Techniques Of Pyloroplasty

by  
Benedict R. Walske, M.D.  
and  
Daniel M. Moschel, M.D.

**A concise review of pyloroplasty and the introduction of a practical modification.**

The need for enlarging the lumen of the distal stomach and proximal duodenum to overcome narrowing and promote gastric emptying has been recognized from the earliest days of abdominal surgery. Obstruction in this area may be caused by developmental abnormalities, ulceration, inflammatory processes and neurogenic imbalance. Excision and re-anastomosis and gastroenterostomy were among the early efforts to correct these defects. It was soon learned that these were major procedures and simpler techniques were necessary.

Heineke in 1886 and Mikulicz<sup>1</sup> in 1887 introduced a technique of pyloroplasty which is still used today. (Fig. 1) This was a simple procedure consisting of a longitudinal incision through the pyloric ring followed by transverse closure. Loreta<sup>2</sup> in 1887 used an internal divulsion method through a gastrostomy incision for stenosis of the pylorus in adults. Nicoll<sup>3</sup> in 1900 extended its use to congenital hypertrophic stenosis. Divulsion was a traumatic and unpredictable maneuver and did not gain general acceptance. Du Four and Fredet<sup>4</sup> in 1907 and Ramstedt<sup>5</sup> in 1912 simply divided the hypertrophic

La necesidad de agrandar el lumen de porción distal del estómago y la proximal del duodeno, para cargar la estrechez y promover el vaciamiento gástrico, ha sido reconocida desde los más tempranos días de la cirugía abdominal.

La obstrucción en esta zona puede ser causada por anomalías del desarrollo, ulceraciones, procesos inflamatorios y desequilibrio neurogénico.

La excisión, la re-anastomosis y la gastroenterostomía fueron de los primeros intentos para cargar estos defectos. Pronto se reconoció que estas eran procedimientos mayores y que técnicas más simples eran necesarias.

Heineke en 1886 y Mikulicz<sup>1</sup> en 1887 introdujeron una técnica para piloroplastia que aún es usada. (Fig. 1) El procedimiento es simple y consiste en una incisión longitudinal a través del anillo pilórico seguido de una sutura transversa.

Loreta<sup>2</sup> en 1887 uso el método de divulsión intrena a través de la incisión de la gastrectomía para la estenosis pilórica de los adultos. Nicoll<sup>3</sup> en 1900 la usó en la estenosis hipertrófica congénita.

La divulsión are una maniobra incierta y traumatizante, no siendo bien aceptada. DuFour

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Kent, Washington



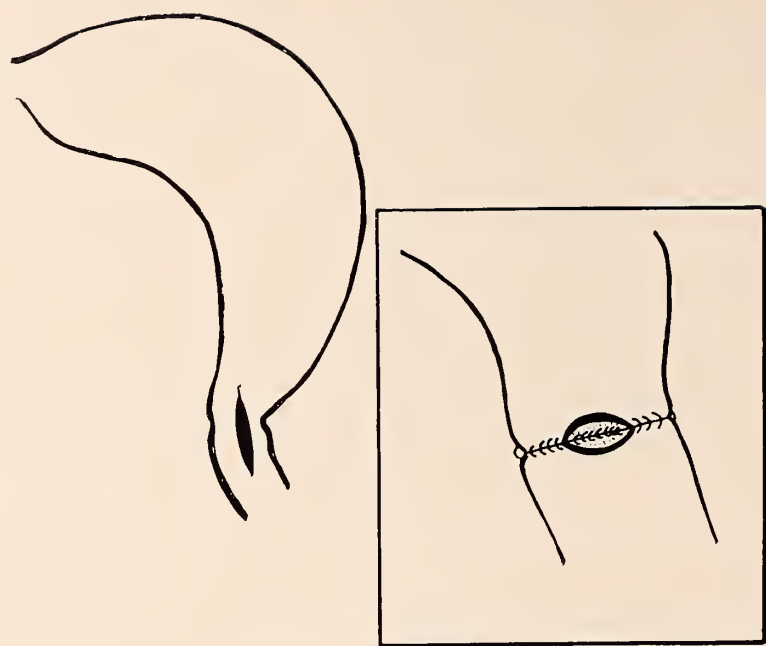


Figure 1

pyloric ring thus relieving the obstruction. This procedure is used today but is of little value for the acquired stenosis of adults and will not be discussed. Finney<sup>6</sup> in 1902 developed a technique of pyloroplasty consisting of a U-shaped incision starting in the distal stomach and continuing into the proximal duodenum. (Fig. 2) The op-

py Fredet<sup>4</sup> en 1907 y Ramstedt<sup>5</sup> en 1912 únicamente seccionaban el anillo pilórico hipertrófico relevando la obstrucción. Este procedimiento es usado hoy día, pero es de poco valor para la estenosis en los adultos y no será discutido. Finney<sup>6</sup> en 1902 creó una técnica para la piloroplastía que consiste en una incisión en U que comienza en la porción distal del estómago y se continúa a la proximal del duodeno. (Fig. 2) Los bordes contrarios de la incisión se suturan

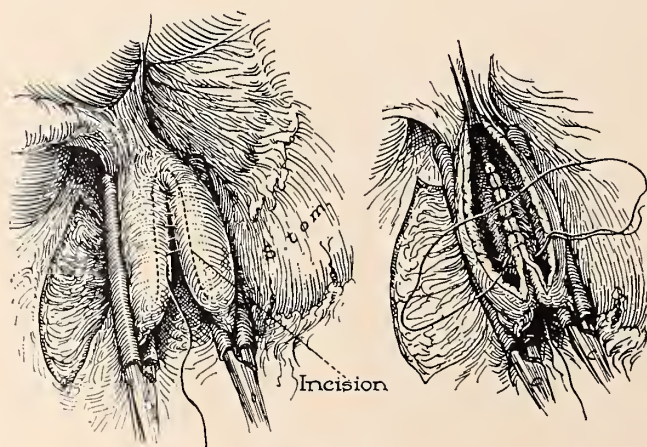


Figure 2



posing incised edges were then sutured to produce a large opening between the stomach and the proximal duodenum. Gambee<sup>7</sup> in 1951 recognized the constricting influence of a 2-row suture closure of the Heineke-Mikulicz pyloroplasty and introduced the use of a single row technique using interrupted non-absorbable sutures. (Fig. 3) This modification has been further popularized by Weinberg<sup>8</sup> and is recognized as a real advance in gastrointestinal surgery. The authors found deficiencies in each of these procedures and recognized that a method of pyloroplasty permitting more normal reconstruction of the pylorus was needed.

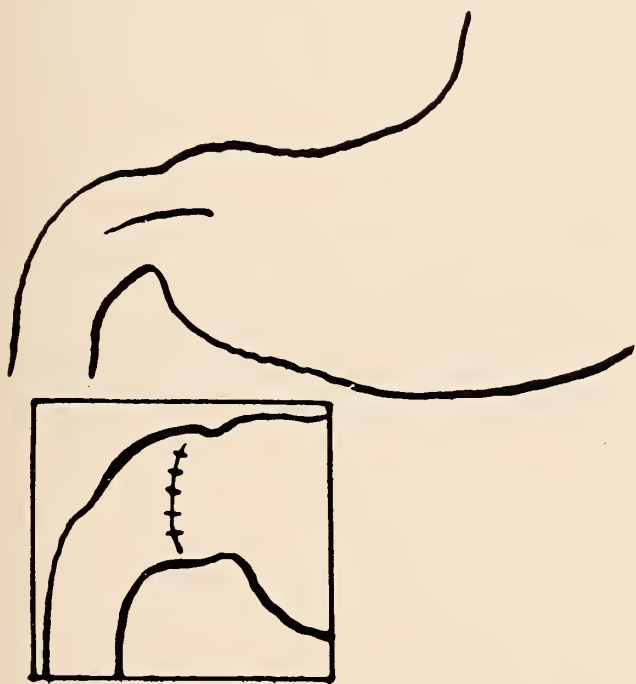


Figure 3

Laboratory Study

The problem of improving a pyloroplasty technique was taken to the animal laboratory and has been previously reported.<sup>9</sup> The authors believed that more normal function could be obtained by a Y-plasty type of reconstruction similar to the Y-plasty for the relief of stenosis of the uretero-pelvic junction in the urinary tract. (Fig. 4) This was modified only in preparing the V portion of the Y in the shape of a U to assure viability of the gastric flap. The straight limb of the Y started just proximal to the pyloric ring and extended distally into the duodenum. The U portion of the Y consisted entirely of the anterior surface of the stomach. Nine dogs were

para producir una abertura grande entre el estómago y la porción proximal del duodeno. Gambee<sup>7</sup> en 1951 se percató de la acción constrictora de la sutura en doble hilera para cerrar. En la piloroplastia de Heineke-Mikulicz introdujo la tecnica de sutura en hilera simple usando sutura con puntos separados inabsorbibles. (Fig 3) Esta modificación popularizada por Weinberg<sup>8</sup> es reconocida como un verdadero avance en la cirugía gastrointestinal. Los autores encontraron deficientes en estos procedimientos, percatándose de la necesidad de un método de piloroplastia que permitiera una reconstrucción más normal del píloro.

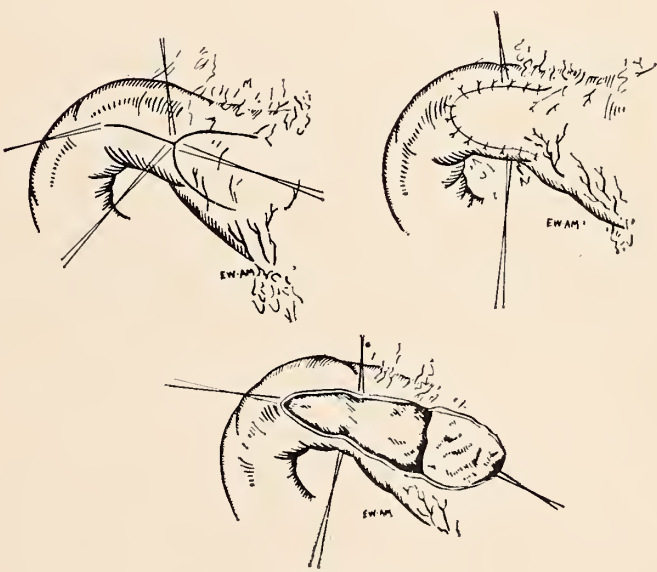


Figure 4

Estudios de Laboratorio

El problema de mejorar la técnica para piloroplastia fué llevado al laboratorio y ha sido reportado previamente.<sup>9</sup> Los autores creyeron que una función más normal podría obtenerse con una reconstrucción o plastia en Y del tipo semejante a la plastia en Y para el alivio de la estenosis de la unión uretero-pélvica del tracto urinario (Fig. 4). Esta fué modificada solamente en que la porción en V de la Y dió la forma en U para asegurar la viabilidad del colgajo gástrico. La raíz de la Y que comienza en el anillo pilórico y se extiende hasta el duodeno. La porción en U de la Y consiste completamente en la superficie anterior del estómago.



TABLE 1				
Dog Number	Weight (lbs.)	Pylorus Before/After		Duodenum°
1	31	1.3	2.5	1.9
2	23	0.7	1.5	1.5
3	28	1.5	2.5	1.7
4	20	0.9	2.3	1.5
5	42	1.7	2.9	2.8
6	38	1.5	2.5	1.9
7	18	1.1	1.9	1.5
8	28	1.5	2.3	2.0
9	26	1.5	2.3	1.9

°Diameter measured in centimeters.

TABLA 1				
Numero del Perro	Peso en Libras	Piloro° Antes/Desúes		Duodeno
1	31	1.3	2.5	1.9
2	23	0.7	1.5	1.5
3	28	1.5	2.5	1.7
4	20	0.9	2.3	1.5
5	42	1.7	2.9	2.8
6	38	1.5	2.5	1.9
7	18	1.1	1.9	1.5
8	28	1.5	2.3	2.0
9	26	1.5	2.3	1.9

°Diameter measured in centimeters

subjected to this procedure and seven survived the anesthesia and the operative procedure. None of the survivors showed any evidence of impairment of circulation in the gastric flap or any dysfunction of the gastrointestinal tract in the postoperative period. It will be noted in Table 1 that the postoperative diameter of the pylorus showed a substantial increase in each instance and in like manner the pylorus was at least as large or larger than the duodenum distal to the pyloroplasty. It is the authors' opinion there is no need to enlarge the pylorus to a diameter greater than that of the adjacent duodenum.

Clinical Experience

The authors' early experiences with pyloroplasty were of the standard Heineke- Mikulicz procedure and in a series of 91 cases obstructive symptoms in the postoperative period were noted in 8 cases. Later experiences included 46 cases of the Gambee modification without any postoperative obstruction. In the five years ending October 1, 1961 the authors have performed the modified Y pyloroplasty in a total of 173 cases as shown in Table 2.

Y-Pyloroplasty (Table 2)	
Pyloroplasty with vagotomy .....	158
Pyloroplasty with hiatus hernia repair ..	9
Pyloroplasty for cicatrix .....	6
Total .....	173

Nueve perros fueron sometidos a este procedimiento y siete sobrevivieron la anestesia y el acto quirúrgico. Ninguno de los que sobrevivieron mostró deterioro de la circulación del colgajo gástrico, así como disfunction del tracto gastrointestinal en el período post-operatorio. Nótese en la Tabla 1 que el diámetro post-operatorio del píloro mostró un aumento considerable en cada instancia y en tal forma el píloro era tan grande o más grande que el duodeno en la parte distal a la piloroplastía. El autor cree que no hay necesidad de agrandar el piloro en un diámetro mayor que el de la union del duodeno.

Experiencias Clinicas

Las primeras experiencias del autor con piloroplastías fueron con la técnica standard de Heineke-Mikulicz y en 91 casos se encontraron 8 con síntomas obstrucivas post-operatorias. En 46 casos posteriores con la técnica de Gambee modificada no presentaron obstrucción post-operatoria. En los últimos 5 anos terminando en Octuboe 1961 los autores han ejecutado la piloroplastía en Y modificada en 173 casos según la Tabla No. 2.

TABLA NO. 2	
Piloroplastía en Y	
Piloroplastía con vagotomía .....	158
Piloroplastía con reparación del hiato herniario .....	9
Piloroplastía por cicatrización .....	6
Total .....	173



There has been no mortality attributable to failure of the pyloroplasty technique and no evidence of early or late obstruction at the site of the pyloroplasty. Figure 5 demonstrates a barium study of the pyloric region before pyloroplasty and again four days after surgery. It is noteworthy to report that the dumping syndrome was not clinically significant in any of the cases reported.

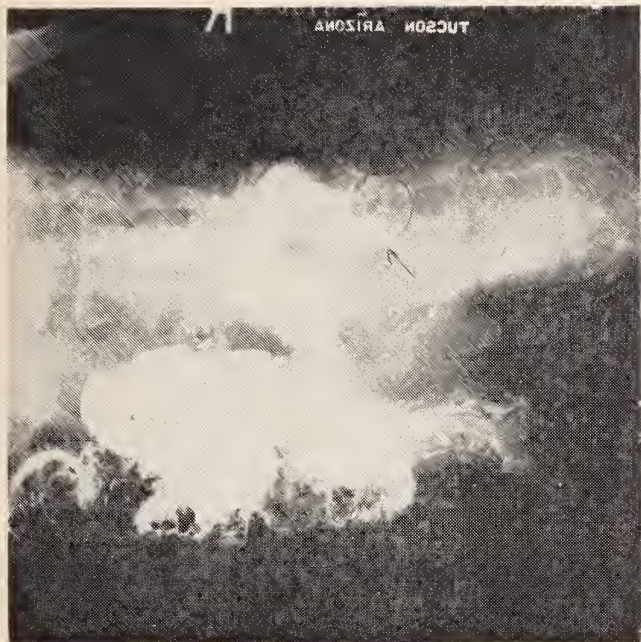


Figure 5A  
Before Pyloroplasty



Figure 5B  
Four days after surgery.

### Discussion

Vagotomy has now been accepted as an effective operative procedure for duodenal peptic ulcer. Early experiences revealed that interruption of the vagus pathways resulted in a neurogenic obstructive problem at the pylorus. Gastroenterostomy was added but created another unphysiological by-pass of the gastrointestinal stream. The gastroenterostomy was responsible for the dumping syndrome in a high percentage of cases. It was recognized that an appropriate pyloroplasty would accomplish adequate gastric emptying without serious disturbance of normal physiology.

The authors have also found pyloroplasty to be beneficial in conjunction with repair of hiatus hernia as suggested by Burford.<sup>10</sup> The recurrence of reflux esophagitis after hiatus hernia repair has been found to be minimal when associated with an appropriate pyloroplasty. In occasional cases pyloroplasty alone may be indicated in duodenal cicatrix where peptic activity is at a low level.

### Discussion

La vagotomía ha sido aceptada como un principio se encontró que la interrupción de la vía de conducción del vago daba como resultado un problema obstructivo del piloro de carácter neurogénico. Agregándole la gastroenterostomía fué la responsable del síndrome de vaciamiento en la mayor parte de los casos, se vió que una piloroplastía adecuada daba como resultado un buen vaciamiento gástrico sin alteraciones de la fisiología normal.

Se ha demostrado que la piloroplastía es útil junto con la reparación del hiato herniario como sugirió Burford.<sup>10</sup> La repetición del reflujo de la esofagitis después de la reparación del hiato herniario se encontro ser mínima cuando se hace una piloroplastía adecuada.

En ciertos casos la piloroplastía sola puede estar indicada en la cicatriz duodenal en que la actividad péptica es baja.

Deben ser reconocidos los métodos primitivos de piloroplastía ya que las técnicas de Heineke-Mikulicz y Finney aún son usadas hoy día. La



## Original Articles

Proper recognition must be given the earlier methods of pyloroplasty since the Heineke-Mikulicz and Finney procedures remain popular today. The Mikulicz procedure as originally described recommends the use of a 2-row suture line closure which in part defeats its primary purpose. The modification by Gambee using a single row of interrupted non-absorbable sutures provides adequate lumen, however, both procedures create a "dog ear" deformity at the pylorus which interferes with proper radiographic interpretation at a later date. The Finney pyloroplasty requires considerable mobilization of the duodenum and also produces rapid emptying of the stomach through a large opening. This has the disadvantage of producing the dumping syndrome in a substantial number of cases. The modified Y-plasty technique on the other hand interposes a pliable gastric wall between the severed ends of the pyloric ring, rather than a transverse suture line, thus increasing its lumen and at the same time retaining moderate sphincter control, approaching normal. On radiographic study there is little deformity to confuse the radiologist in subsequent examination.

### Summary

1. Much credit must be given to the early pyloroplasty procedures.
2. The Gambee modification of the Heineke-Mikulicz procedure is a definite advance in the pyloroplasty technique and meets all requirements except that of creating deformity.
3. Authors believe the Y-plasty technique of pyloroplasty provides adequate lumen without disturbance of normal function and without creating deformity.

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técnica de Mikulicz según se describió originalmente recomienda el uso de una hilera doble de sutura para cerrar lo cual en parte contradice su primer intento.

La modificación de Gambee quien usa una hilera sencilla de sutura en puntos separados para cerrar proporciona un lumen adecuado pero de cualquier manera las dos técnicas producen una deformidad llamada "oreja de perro" en el píloro que altera la interpretación correcta radiológica cuando se desea interpretar en fecha posterior. La piloroplastia de Finney requiere una considerable movilización del duodeno y ademas produce un rápido vaciamiento del esómago a través de una gran abertura.

Esto tiene la desventaja de producir el síndrome de vaciamiento en un buen número de los casos.

La técnica modificada de la plástia en Y por otro lado interpone la pared gástrica flexible entre los extremos severados del anillo pilórico en lugar de una linea de sutura transversal agrandando así el lumen y al mismo tiempo conserva un moderado control del esfínter con tendencia a lo normal. En el estudio radiológico hay muy poca deformidad que pudiera confundir al radiólogo en interpretaciones subsecuentes.

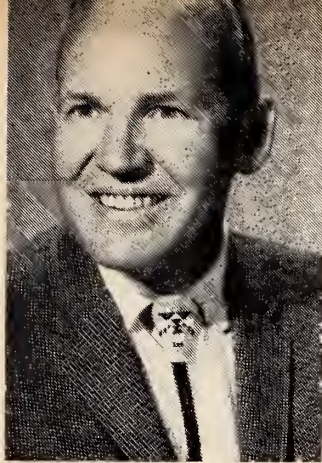
### Sumario

1. Debemos dar crédito a los primeros métodos de piloroplastia.
2. La modificación de Gambee del metodo de Heineke-Mikulicz es definitivamente un avance en la técnica de piloroplastia que llena todos los requisitos excepto que deja una deformidad.
3. El autor cree que la técnica en Y de la piloroplastia proporciona un lumen adecuado sin interrumpir la función normal y sin crear deformidad.

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Dr. Urie

# "Young Children's Efforts At Mastery Of Traumatic Experiences"

by

Murray G. Urie, M.D.

**Childhood experience with illness need not harden into morbid patterns of reaction. Doctor Urie reports a case which, by default, would likely have done so.**

**I**N THOSE who are involved in assisting children in their growth and adaptations, there is often a feeling of "walking a tight rope." Is one being over or under involved, unduly protective, or excessively withdrawn and withholding? Are the child's capabilities and potentials being over or under valued?

Particularly this question comes up for consideration when the child has sustained, or is about to be subjected to, painful traumatic experiences of a physical or psychological nature or various combinations thereof. In the presence of these uncertainties, how can a person or persons involved in this experience with the child act in such a way that the experience can ultimately be integrated by the child or mastered with a minimum of residual?

Much has been written on the first aspect, that of the contemplated traumatic situation. In this instance there is some possibility of "working through" prior to the event so that sequelae can be prevented or minimized. These potential traumata range all the way from experiences of separation from the home at an early age to entering a hospital for painful surgical procedures to preparation for the child's own mortality (City of Hope). Following the early work of Pearson (1941)<sup>7</sup> and Levy (1945)<sup>5</sup>, there have been many modifications introduced as a result of interest in this area. Thus, timing of elective operations, modified practices in relation to admission and visiting procedures, and the induction of anesthesia<sup>2</sup> have shown ingenious modifications. Thus, doctors hospital personnel, parents and children themselves have contributed

toward the handling and prevention of traumatic hospital experiences.<sup>1,3,4,6,8</sup>

Considerable thought and effort have been expended in the direction of dealing with the emotional aftermath of traumatic events in children's experiences. Human emotions of love and the desire to protect are accented by a child's suffering. However, other feelings are present although they may be more or less dissociated from consciousness at such time of crisis. There is usually some resentment, which may be projected onto others, over having one's life inconvenienced by this event, and feelings of guilt over responsibility for "having inflicted or not prevented this traumatic experience." Feelings of fear, helplessness, and hopelessness may be added on the basis of degree of severity of the condition and its ultimate prognosis. These varied feelings may be present on the part of the responsible adults, communicated to and internalized by the child. When the crisis is passed, there needs to be an awareness that the deferred feelings must be worked through with resolution of this crisis. Comes the revolution with various presenting symptoms, asking for some relief for this new and yet old suffering.

**H**ERE the so-called helping persons are faced with the question raised previously — how to help enough and yet not too much. This case presentation illustrates the point that a search for the strengths within the child, with support from significant adults (in this case, the parents and the therapist) can be rewarding, informative and lay the groundwork for future growth experiences.

**CASE STUDY:** Jimmy F., age five, was first seen in joint interview with his parents, having

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## Original Articles

been referred by their family physician. It was noted that the mother, age 35, a graduate R.N., was a rather shy, self-effacing person, not much given to emotional expression, and often spoke in a subdued tone, that at times was barely audible. The father, age 36, was employed in a local plant working at an engineering level, but with only a high school and trade school education. He was a large man who expressed emotions more freely and assumed some initiative, but who was also supportive of his wife in her efforts. The father was Protestant, the mother, Catholic, and Jimmy and his sister, age 10, were Catholic, attending public schools.

The indications prompting referral were complaints of poor sleeping on Jimmy's part, of about two months duration. He awakened nightly, frightened, and sought his parents, particularly his mother's company for comfort, requiring of them about an hour of activity before he would fall asleep. He was then, however, returned by his parents to his own bed in a separate room. He had complained of frequent headaches and would interrupt play with other children to come into the house and lie down. Headaches had not responded to medication given at that time, but seemed to "wear off." It was also noted that he had shown some startle reaction to sounds, such as clanging noises in the street.

Jimmy, in the interview situation, added the content of the nightmares — his being hurt by falling in a hole, by rockets, and by having his head hit. Sometimes he "did have his head hit a little" when he played; sometimes he thought it was going to be hit. He was quite a vocal boy and somewhat dramatic.

Apparently in the school setting he had sometimes asked to rest and after a conference between the teacher and his mother he had been allowed to do so. Otherwise he continued to participate in, and enjoy school activities.

THE mother and father developed the history from this point. About two months prior to the family's being seen, the mother and two children returned to New York to visit relatives; the father was to join the family again a week later. The mother and the children were descending from the train to the platform in Grand Central Station, New York. While the mother was struggling with luggage, the older child, having alighted, Jimmy slipped from the mother's grasp into the space between the steps

and the platform. He struck his head against a rail, crying immediately. There was no unconsciousness. The mother hastened to pick him up, comforting him, with the sister also adding some solace. At the same time, on an adjoining track and in the vicinity, trains were pulling in and out. It was noisy and "it was terrifying to think what could have happened."

All this time no assistance was available for carrying the luggage. At this point the father resentfully stated that he had written the railroad company previously, stating the time and place of his wife's expected arrival and requesting that someone to assist with the luggage be present. He therefore "blamed the company" on the basis of their total incompetence for not only not preventing the accident, but also for their subsequent handling of the situation. As a result his feelings were so strong that he turned the matter over to an attorney. With much feeling he elaborated on events that had led to his taking this step. For instance, he felt that only cursory medical examination had been given the boy by the railroad doctor shortly after the accident; and that the claim agent had not replied to his letters.

THE mother then felt guilty in relation to her carelessness in causing the accident. She also mildly expressed some frustration with Jimmy (this was joined in by the father) for not having recovered from such a minor accident. The main blame, however, was essentially projected, so that Jimmy was not markedly defensive when he stated that he "was trying." The parents were quick to reassure him that *he* was not being blamed.

This was picked up by the therapist in the context that they were all trying and this was important. As part of their trying they had come here, rather than relying exclusively on the law to handle the situation. At a suitable time their lawyer would be included in an appropriate manner; in the meantime we would all work further in overcoming the problem. It was shared with them that dreams might well be considered as attempts on Jimmy's part to master the feelings of fright, although unsuccessfully, so that more help would be needed. Jimmy again participated at this juncture to state, "I'm trying." He and his parents were encouraged to look for what methods they could find, between this and the next appointment. A developmental history and



neurological examination had been done earlier in the interview, both of which revealed no indication for further exploration.

**F**OUR FURTHER therapy sessions were held with the mother and boy, with termination accomplished at the end of this time and a two month follow-up planned. During the sessions the initial portion was conducted in joint interview with mother and child in the office setting, and the latter part in the playroom with the boy alone, and then with his mother. From interview to interview there was rapid decrease in his symptomatology. He first awakened less often, required less comforting when he did awaken, and the complaint of headache disappeared. It was of some interest that Jimmy thru-out utilized the verbal method; he did not feel a need for play materials, but was not phobic in his reaction to the materials. On one occasion he did utilize some drawing, when there was a slight regression at the time of the Cuban Crisis. At this time he had some further nightmares, although they were exclusively preoccupied with rockets. His parents picked this idea up in terms of the general anxiety at that time by having shown him our American defense weapons exhibited at the State Fair. He was a bit confused about "searchlights which would be looking for planes," and they were able to correct this distortion by showing him that searchlights in our area were also used for numerous grand openings.

Jimmy had caught onto the idea that *he* could have some good ideas about how to overcome his difficulties and he was eager to share them with his mother and the therapist.

Some ideas that Jimmy developed were the following. He at first would climb fences and jump from them, but wore a football helmet to protect his head, later discarding it when he felt comfortable and secure. He could then sustain an occasional bump to his head as part of this activity, without having any more than the appropriate response. In another interview he reported that he had been able to get the neighborhood children to play his daily game of jumping into a dark hole which they had made. Although the children lost interest in the game before he did, he persisted until he felt comfortable, then could abandon the game and rejoin the other children in their activities.

**I**N THE FINAL interview, the mother spontaneously exclaimed, "I have a new respect for

this boy and can see in retrospect that the accident had probably occurred by my insisting on his holding my hand, whereas he was perfectly capable of handling the descent himself." Laughingly she stated, "Maybe it was a good thing this happened, even though painful, because I'll let him grow up and I'll value his ideas. I also hope that others will do the same."

The attorney was contacted and a note was written to him which was reviewed with the mother and Jimmy. There was a mutual agreement that only medical expenses would be claimed and that there was no residual justifying further legal participation on the family's behalf.

At the time of follow-up, which was done by phone, the mother reported the following. She and Jimmy had taken a train trip to California and Jimmy had gaily jumped up and down from the steps to the platform, remarking how he wasn't afraid anymore. The mother mentioned that she had planned this train trip purposely and felt quite satisfied that there was no residual. They flew back without incident. Case is therefore closed.

### Summary

A case has been presented to illustrate a child's efforts at mastery of a traumatic experience, relatively mild in nature, but developing in the direction of a neurotic adjustment. Support of his efforts and those of his parents was sufficient to carry through to a successful resolution within a quite short period of time.

Not all cases can, or should be similarly handled. There were many fortuitous circumstances in this case that led to early resolution of the problem. These were the considerable assets of the parents and child and an early referral by an alert practitioner. The emphasis on this case is the importance of considering and including the child's participation toward the mastery of his difficulties, even at quite a young age.

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patients with suicidal tendencies. Massive overdosage of meprobamate may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. Even though it has not been reported with 'Deprol', consider the possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after prolonged use at high dosage. *Complete product information available in the product package, and to physicians on request.*

**Usual adult dosage:** 1 tablet t.i.d. or q.i.d. May be increased gradually, as needed, to 6 tablets daily. With establishment of relief, may be gradually reduced to maintenance levels. **Supplied:** Light-pink, scored tablets. Bottles of 50.



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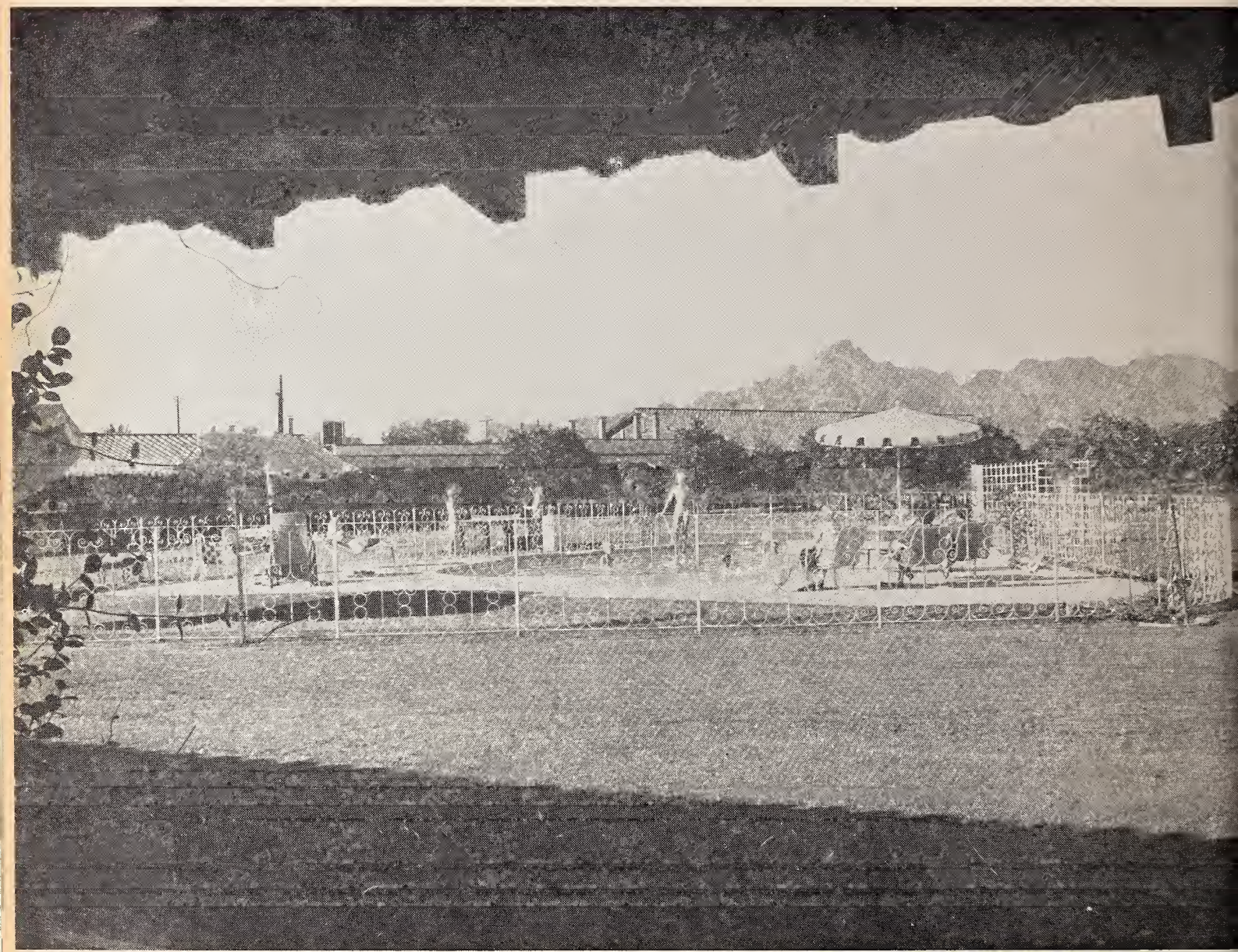
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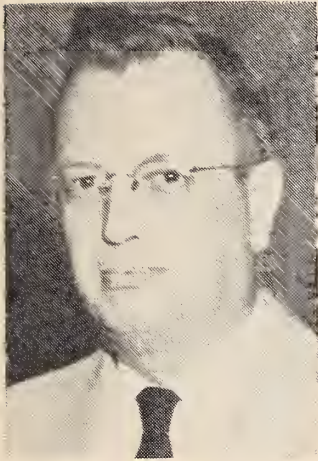
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## Challenging Insecurity



Dr. Brewer

I FEEL a little incongruous writing this first President's Page a month before my annual report to the society and before assuming the responsibilities of office. This same feeling must come to the president-elect every year, when the publication dead line approaches. But our much harried editor,

Bob Lorenzen, has too many important problems to solve and I shall add not one bit to his burden — I hope.

During the past four months I have travelled over all of our state, visiting county medical societies and having a wonderful time. Never have we seen thicker, bluer lupine spreading in waves across the Mohawk valley; and the most inspiring, unforgettable vista of all, the beautiful San Francisco peaks, covered with the deep snows of the March storm, and looming like white-washed pyramids of Gizeh, anchored above the oranges and reds of Oak Creek Canyon! We've travelled the route twice since and the picture is gone — and we may never see it again except in our memory. Arizona is truly the most beautiful state in the union!

But it hasn't been only the natural beauty of our state which has inspired me. I've met our doctors and many of their wives, a real privilege. They are the same everywhere, with the same problem, the same concern — the care of the sick — and it makes no difference whether the county's medical population is four or seven hundred. This really sounds trite, yet living in the big city or in the villiage seems to set up an artificial barrier, but only because the frame of reference is different. The basic motivation, the *raison d'etre*, is universally present, binding physician and patient in the common valence. This is what make doctors out of zygotes in the first place.

HOWEVER, with all this aura of fraternity and sublimation of motivation, I have run head long into a matter of grave concern. In many of

the meetings, physicians of "governmental medical staffs" were present. They freely entered into discussions, as they certainly should and have every right to do. And I hasten to add that, military, veterans administration, indian service and public health service doctors are doing a fine, praiseworthy job. But this isn't the point. Some of these men are teetering on the brink of choosing between the financial security offered by a paternalistic bureaucracy and the challenging insecurity of free medical practice. For the most part those I have talked to are young men out of school and internship no more than one or two years — not career men. They say, "We're against socialized medicine, but what is wrong with government medicine"!! Yes, I know it is hard for many to believe that there is a shred of difference between the two. Their emphasis, the deciding factor for them, is financial security, which in ultimate analysis should be last and not first in such a choice. And believe me, I've seen first hand the financial problems of the medical profession elsewhere in the world where governmental — socialized — medicine exists, not to mention the professional plight of those same doctors and the stereotyped treatment on the patient end of the stick.

Is there anything deeper than a simple concern over money? I think so. For years we have been increasingly aware of the pressures of socialism in the United States. The average child naturally accepts the philosophy he is born in as right — and will defend, even fight, for it. I wonder if these young men have not been born in a country already so socialized that they are ready to accept that philosophy and go to bat for it without argumentation except in its defense — in 1964.

Where is the spirit of our pioneers that made our nation the greatest on the face of the earth in less than two hundred years? What is happening to the respect we used to have for individual initiative, perseverance, hard work, honest sweat — the "honest dirt" my mother used to speak about when I came home from a factory only thirty years ago? Nobody ever heard of feather-bedding in those days and would have considered it dishonest if they had.

I AM WORRIED when a young doctor or a lawyer, or a clergyman, or anyone else for that matter, is primarily concerned about his financial future, who hasn't faith enough in God



## President's Page

and himself to live a vigorous, useful life without fear. But I am frightened when the same young doctor is willing to give up the most precious thing in medicine, the unlegislable privilege, the emotion which pushed him relentlessly through the years of an exhausting medical education, his real reason to be, the *doctor-patient relationship* — the most sacred thing in all the medical world. I know a semblance of it exists in governmental medical institutions, we have all seen it in the armed forces, but never has it been and never can it be the same, otherwise we would all be working in such institutions or working for socialized medicine and socialized law and socialized food and socialized religion. Walter Reuther has thrown down the gauntlet. He is no longer willing to start the socialistic ball rolling with King-Anderson legislation, he wants to go whole hog with total socialization of medicine, doctors, hospitals, nurses, technicians, patients — yes, patients — because socialization of medicine has always been the first step in total socialization of a country, even to the socialization of man's soul if carried to the ultimate.

Need I say more about my concern? We live in the best state in the greatest country on the face of the earth. God give us the perspicacity to keep it that way.

### Epilogue

Yes, I believe in God, in America under God, in the dignity of man under God.

W. Albert Brewer, M.D.  
President



### Coconino County Health Department Designated A Yellow Fever Immunization Center

This gives Arizona three such centers. Listed below are the locations, days and hours which the vaccine is available:

Coconino County Health Department  
Court House, Flagstaff  
Mondays at 10:00 a.m.

Maricopa County Health Department  
1825 E. Roosevelt, Phoenix  
Monday-Friday, 1:00-2:00 p.m. by appointment

Pima County Health Department  
161 W. Alameda St., Tucson  
Fridays at 3:00 p.m. by appointment

## "Dear Doctor:"

In your busy night-and-day preoccupation with other people's lives, it is very difficult for you to find time to think about your *own* future.

Yet face it you must for the sake of your family.

We urge you to join with our many other friends and customers of the medical profession, and arrange for a visit — with your lawyer — to our Trust Department.

Discuss your estate plans in detail. Let an experienced Trust Officer show you how the group-judgment of specialists in the Trust field will insure your estate being handled soundly, economically — and to the letter of your Will.



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## The Confused Crawfish

We are told that professional men must avoid socio-economic and political controversy. As physicians we are advised it is beneath our dignity and improper to openly advocate an uncontrolled economy, the implication being that less dignified members of our society should be the arbiters and planners of our political destiny.

Let us realize, however, that if we do honestly feel that our American System is more than a politician's catch phrase, we must take positive and constructive action to oppose the advocates of socialism who daily strive for more control over the individual. We must recognize Fedicare and similar proposals as sugar coated doses of compulsory socialism and oppose them openly.

If the physicians and lawyers who signed the Declaration of Independence had felt it was beneath their dignity "to become involved," we might not have a choice.

In a recent speech Doctor Nicholas Nyaradi, Director of the School of International Studies at Bradley University, told the following story of some crawfish in his native Hungary. One day, while gaily playing in their sun-drenched stream, they felt the uneasy movement of a fisherman's

net which swept them up and out of the water. Their immediate feeling of despair gave way to satisfaction when they found they were not left high and dry but were placed in a bucket of water. Rather than try to escape, they rationalized that after all the sun still shown in slightly and there was enough water. They soon learned that this was only a temporary change when they were sold to a housewife who took them home in a dry, dark paper bag. This desperate situation seemed improved when the housewife placed them in a large pot of water, where they recovered their composure and once more told themselves that their plight was quite tolerable. When the pot was covered and the water became warm the crawfish still convinced themselves that it couldn't happen to them, and the warm water was rather pleasant. The end soon came, and as the water boiled in the pot the housewife raised the lid and discovered that the crawfish were both *red* and *dead*.

The crawfish had no choice — we have.

Robert F. Lorenzen, M.D.  
Editor

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

1. Manuscripts, including references or bibliography, should be typewritten, double-spaced, on one side of the paper only, and the original and a carbon enclosed.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

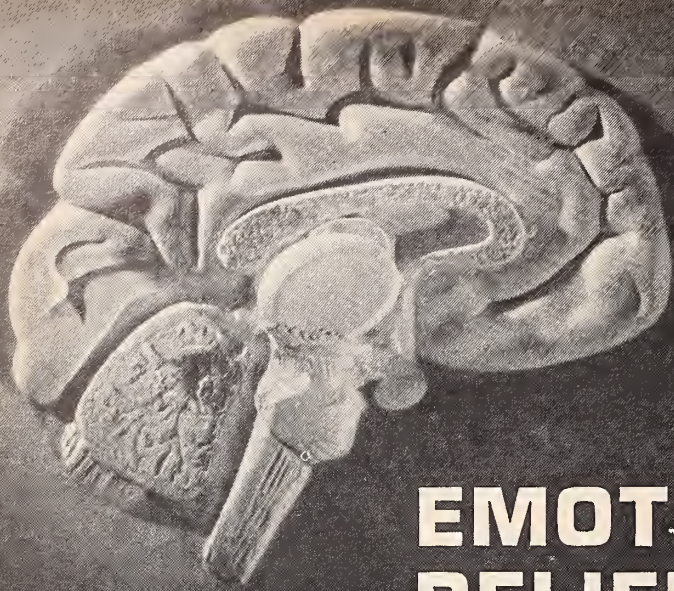
3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

5. The Journal reserves the right to edit all material.

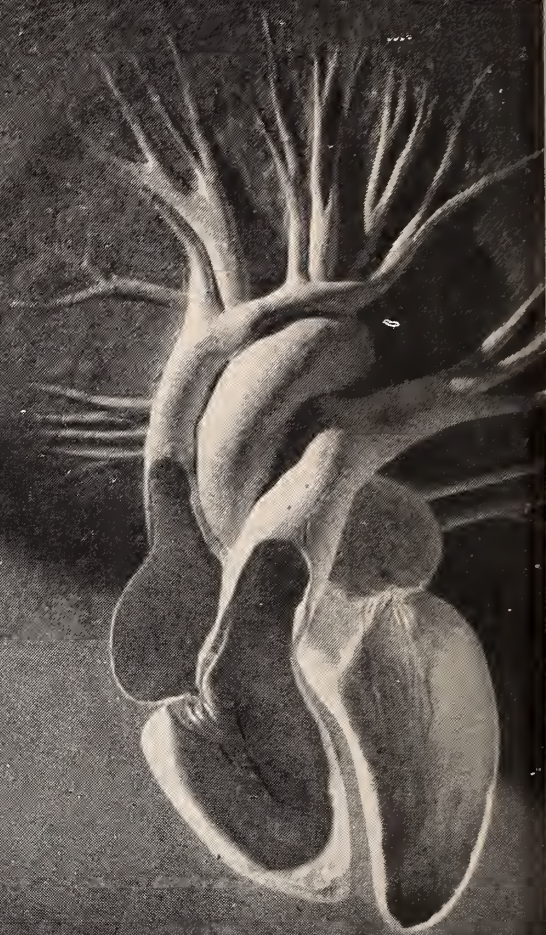
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to patients with suicidal tendencies. Massive overdosage may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after prolonged use at high dosage.

*Complete product information available in the product package, and to physicians upon request.*

**Usual adult dosage:** One 400 mg. capsule or two 200 mg. capsules at breakfast; repeat with evening meal.

**Supplied:** 'Meprospan'-400 (meprobamate 400 mg.), 'Meprospan'-200 (meprobamate 200 mg.), each in sustained-release capsules. Both potencies in bottles of 30.



# Duty . . . Honor . . . Country

*Delivered at the Military Academy,  
West Point, on May 12, 1962 by  
General of the Army, DOUGLAS MacARTHUR  
(Speaking without text or notes)*

## Soldier-Statesman

In each generation there are but few who remain as symbols of greatness for those who follow. General of the Army Douglas MacArthur was such a man.

Demagogues may receive more votes, articulate hucksters of expediency may sell more novel ideas, but it is the few men of unbending character and integrity who are true giants on whose shoulders future generations stand.

With the passing of General MacArthur a giant of our times is gone, but his words live forever. One of his last speeches, delivered to those whose profession is arms, is reprinted in the hope that its message may prove stimulating to those whose profession is medicine.

R.F.L.

Duty, honor, country! Those three hallowed words reverently dictate what you want to be, what you can be, what you will be. They are your rallying point to build courage when courage seems to fail, to regain faith when there seems to be little cause for faith, to create hope when hope becomes forlorn.

Unhappily, I possess neither that eloquence of diction, that poetry of imagination, nor that brilliance of metaphor to tell you all that they mean.

The unbelievers will say they are but words, but a slogan, but a flamboyant phrase. Every pedant, every demagogue, every cynic, every hypocrite, every troublemaker, and, I am sorry to say, some others of entirely different character will try to downgrade them even to the extent of mockery and ridicule.

But these are some of the things they build. They build your basic character. They mold you for your future roles as the custodians of the nation's defense. They make you strong enough to know when you are weak, and brave enough to face yourself when you are afraid.

### WHAT THE WORDS TEACH

They teach you to be proud and unbending

in honest failure, but humble and gentle in success; not to substitute words for action; not to seek the path of comfort, but to face the stress and spur of difficulty and challenge; to learn to stand up in the storm, but to have compassion on those who fall; to master yourself before you seek to master others; to have a heart that is clean, a goal that is high; to learn to laugh, yet never forget how to weep; to reach into the future yet never neglect the past; to be serious, yet never take yourself too seriously; to be modest so that you will remember the simplicity of true greatness; the open mind of true wisdom, the meekness of true strength.

They give you a temperate will, a quality of imagination, a vigor of the emotions, a freshness of the deep springs of life, a temperamental predominance of courage over timidity, an appetite for adventure over love of ease.

They create in your heart the sense of wonder, the unfailing hope of what next, and the joy and inspiration of life. They teach you in this way to be an officer and a gentleman.

And what sort of soldiers are those you are to lead? Are they reliable? Are they brave? Are they capable of victory?

Their story is known to all of you. It is the



## Reprints

story of the American man at arms. My estimate of him was formed on the battlefields many, many years ago, and has never changed. I regarded him then, as I regard him now, as one of the world's noblest figures; not only as one of the finest military characters, but also as one of the most stainless.

His name and fame are the birthright of every American citizen. In his youth and strength, his love and loyalty, he gave all that mortality can give. He needs no eulogy from me, or from any other man. He has written his own history and written it in red on his enemy's breast.

### WITNESS TO THE FORTITUDE

In 20 campaigns, on a hundred battlefields, around a thousand camp fires, I have witnessed that enduring fortitude, that patriotic self-abnegation, and that invincible determination which have carved his statue in the hearts of his people.

From one end of the world to the other, he has drained deep the chalice of courage. As I listened to those songs in memory's eye I could see those staggering columns of the first World War, bending under soggy packs on many a weary march, from dripping dusk to drizzling dawn, slogging ankle deep through mire of shell-pocked roads; to form grimly for the attack, blue-lipped, covered with sludge and mud, chilled by the wind and rain, driving home to their objective, and for many, to the judgment seat of God.

I do not know the dignity of their birth, but I do know the glory of their death. They died unquestioning, uncomplaining, with faith in their hearts, and on their lips the hope that we would go on to victory.

Always for them: Duty, honor, country. Always their blood, and sweat, and tears, as they saw the way and the light. And 20 years after, on the other side of the globe, again the filth of dirty foxholes, the stench of ghostly trenches, the slime of dripping dugouts, those boiling suns of the relentless heat, those torrential rains of devastating storms, the loneliness and utter desolation of jungle trails, the bitterness of long separation of those they loved and cherished, the deadly pestilence of tropical disease, the horror of stricken areas of war.

### SWIFT AND SURE ATTACK

Their resolute and determined defense, their swift and sure attack, their indomitable purpose,

their complete and decisive victory — always victory, always through the bloody haze of their last reverberating shot, the vision of gaunt, ghastly men, reverently following your password of duty, honor, country.

You now face a new world, a world of change. The thrust into outer space of the satellite spheres and missiles marks a beginning of another epoch in the long story of mankind. In the five or more billions of years the scientists tell us it has taken to form the earth, in the three or more billion years of development of the human race, there has never been a more abrupt or staggering evolution.

We deal now, not with things of this world alone, but with the illimitable distances and yet unfathomed mysteries of the universe. We are reaching out for a new and boundless frontier. We speak in strange terms of harnessing the cosmic energy, of making winds and tides work for us . . . the primary target in war, no longer limited to the armed forces of an enemy, but instead to include his civil population; of ultimate conflicts between a united human race and the sinister forces of some other planetary galaxy; such dreams and fantasies as to make life the most exciting of all times.

And through all this welter of change and development your mission remains fixed, determined, inviolable. It is to win our wars. Everything else in your professional career is but corollary to this vital dedication. All other public purpose, all other public projects, all other public needs, great or small, will find others for their accomplishments; but you are the ones who are trained to fight.

### THE PROFESSION OF ARMS

Yours is the profession of arms, the will to win, the sure knowledge that in war there is no substitute for victory, that if you lose, the nation will be destroyed, that the very obsession of your public service must be duty, honor, country.

Others will debate the controversial issues, national and international, which divide men's minds. But serene, calm, aloof, you stand as the nation's war guardians, as its lifeguards from the raging tides of international conflict, as its gladiators in the arena of battle. For a century and a half you have defended, guarded, and protected its hallowed traditions of liberty and freedom, of right and justice.



Let civilian voices argue the merits or demerits of our processes of government; whether our strength is being sapped by deficit financing indulged in too long, by federal paternalism grown too mighty, by power grown too arrogant, by politics grown too corrupt, by crime grown too rampant, by morals grown too low, by taxes grown too high, by extremists grown too violent; whether our personal liberties are as firm and complete as they should be.

These great national problems are not for your professional participation or military solution. Your guidepost stands out like a tenfold beacon in the night: Duty, Honor, Country.

You are the lever which binds together the entire fabric of our national system of defense. From your ranks come the great captains who hold the nation's destiny in their hands the moment the war tocsin sounds.

The long, gray line has never failed us. Were you to do so, a million ghosts in olive drab, in brown khaki, in blue and gray, would rise from their white crosses, thundering those magic words: Duty, Honor, Country.

#### PRAY FOR PEACE

This does not mean that you are warmongers.

On the contrary, the soldier above all other people prays for peace, for he must suffer and bear the deepest wounds and scars of war. But always in our ears ring the ominous words of Plato, that wisest of all philosophers: "Only the dead have seen the end of war."

The shadows are lengthening for me. The twilight is here. My days of old have vanished — tone and tints. They have gone glimmering through the dreams of things that were. Their memory is one of wondrous beauty, watered by tears and coaxed and caressed by the smiles of yesterday. I listen then, but with thirsty ear, for the witching melody of faint bugles blowing reveille, of far drums beating the long roll.

In my dreams I hear again the crash of guns, the rattle of musketry, the strange, mournful mutter of the battlefield. But in the evening of my memory I come back to West Point. Always there echoes and re-echoes: Duty, Honor, Country.

Today marks my final roll call with you. But I want you to know that when I cross the river, my last conscious thoughts will be of the corps, and the corps, and the corps.

I bid you farewell.

## THREE FOUNTAINS

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## **An open letter on a new concept in cigarette filtration from the makers of new LARK cigarettes**

DEAR DOCTOR: In the recent report of the Surgeon General's Advisory Committee on Smoking and Health, attention was drawn to the inhibitory effect of cigarette smoke on respiratory cilia. On page 34, the Report states: "Components of the gas phase of cigarette smoke have been shown to produce various undesirable effects on test animals or organs. One of these effects is suppression of ciliary transport activity, an important cleaning function in the trachea and bronchi (Chapter 6, p. 61 and Chapter 10, pp. 267-270)."

The Report also notes that there is a cigarette filter containing special charcoal granules which reduces certain gases which inhibit the activity of mammalian respiratory cilia. On page 61 of the Report it states: "Activated carbons differ markedly in their adsorption characteristics. Carbon filters previously employed in

cigarettes do not have the specific power to scrub the gas phase. It has been reported that a filter containing special carbon granules removes gaseous constituents which depress ciliary activity (28)." The reference cited is "New England Journal of Medicine" (Kensler, C. J. and Battista, S. P., 269: 1161-1166, November 28, 1963).

In 1954, Liggett & Myers Tobacco Company began a broadly based program of biological research on tobacco smoke which has been conducted in the Life Sciences Division of Arthur D. Little, Inc., Cambridge, Mass. In recent years, this research has centered on the gas phase of cigarette smoke, and the development of a specially treated charcoal-granule filter. This filter materially reduces the gases in cigarette smoke which contribute to the inhibition of the activity of mammalian

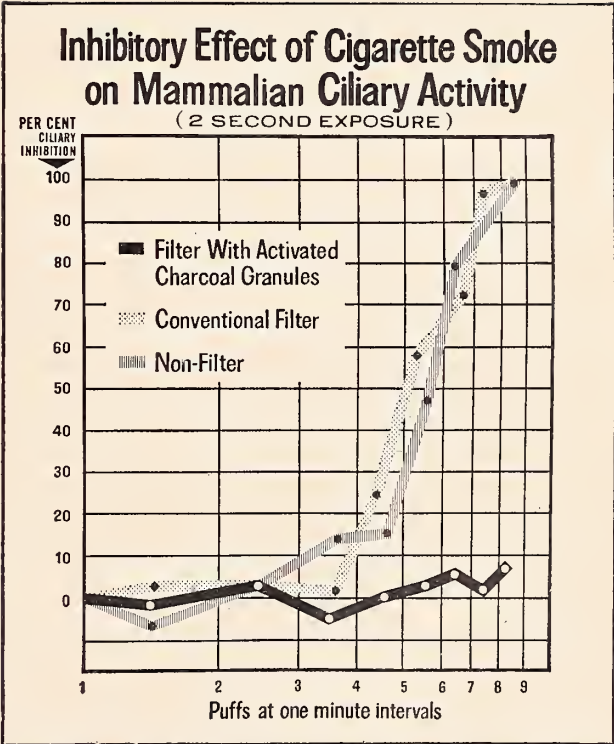


respiratory cilia in *in vitro* experiments. (see chart.)

Dr. Kensler points out in his paper referred to above: "Although it is recognized that these *in vitro* findings may not be directly extrapolated to the effects of cigarette smoke on human pulmonary tissue the use of the charcoal-granule filter will obviously reduce the level of exposure of the non-ciliated as well as ciliated bronchial and alveolar cells to potentially harmful smoke components."

The specially treated charcoal-granule filter discussed in the Kensler and Battista paper was the prototype of the one which is now available to the public on Lark cigarettes. Since some of your patients may have heard of this filter through the lay press, and may inquire about its basis in science, we believe you may wish to have the information at hand.

LIGGETT & MYERS TOBACCO CO.



(Data from figure 6, page 1165, "New England Journal of Medicine," November 28, 1963)

**Chart shows inhibition of the mammalian ciliary activity by the irritating gases in cigarette smoke:**

1. The screened lines represent conventional filter and non-filter cigarettes and show how they produced 50% ciliary inhibition after 5 to 6 puffs and 100% inhibition after 7 to 8 puffs.
2. On the other hand, the filter with activated charcoal granules, represented by the solid black line, produced no significant inhibition (less than 10%) when the whole cigarette (8 puffs) was smoked.





## Frank X. Marino, M. D. 1913-1963



On December 4, 1963, Arizona lost one of its ablest physicians. It was on that date that Frank X. Marino, M.D. died.

Doctor Marino was born in Sandoval, Illinois on December 11, 1913. At the age of 13 he moved with his family to Phoenix, Arizona where he attended Phoenix Union High School. He obtained his pre-medical training at Arizona State University and the University of Arizona and attended Harvard University Medical School, graduating in 1939. He was a medical resident at Charity Hospital, New Orleans, Louisiana from 1939 to 1942 and served in the Medical Corps U.S. Army from 1942 to 1946. Doctor Marino was active in teaching and obtaining the rank of associate professor of Medicine at Louisiana State University Medical School. He was certified by the American Board of Internal Medicine in 1946 and had been a

member of the American College of Physicians since 1948.

Doctor Marino returned to Phoenix, Arizona in 1958 where he became well known and respected as an unusually talented specialist in Internal Medicine. His chief interest was in the field of cardiopulmonary disease. His excellence as a physician could be attributed in large measure to the great kindness and understanding which he extended to his patients.

Doctor Marino was an ardent outdoorsman and was particularly fond of fishing. He will be greatly missed by his family, his associates and his patients.

Dr. Marino is survived by his wife, Marjorie, and their three daughters, Barbara, Susan and Nina.

Edward A. Burnes, Jr., M.D.





## Robert Stone Barrett, M. D. 1919-1964

Doctor Barrett died, the victim of an automobile accident, on February 5, 1964.

A native Arizonian, Doctor Barrett was born in Prescott on November 16, 1919. He attended grade school in Prescott, and after his family's move to Phoenix, Phoenix Union High School and Phoenix College, then Stanford University and the School of Medicine at Stanford, graduating in 1944. He served his internship at Sacramento, California.

In 1939 Doctor Barrett joined the United States Naval Reserve and was called into service in 1942 and attached to the Marine Corps. He saw action in the South Pacific Theatre and returned to the United States after the hostilities with Japan had ceased.

He was chief resident surgeon at the St. Francis Hospital in San Francisco, and then in private practice of surgery in that city until 1951, when he accepted a residency in psychiatry at the Veterans Administration Hospital in Los Angeles.

In 1954 Doctor Barrett returned to Phoenix and was chosen as the first director of the Maricopa Child Guidance Clinic, the first of such clinics in Arizona. He remained at the clinic for two years and then opened his office in the private practice of psychiatry.

Doctor Barrett was an avid sportsman. He

excelled in football, golf, fishing and hunting.

The greatest tribute one can pay to Doctor Barrett's proficiency is the fact that he was indeed a "doctor's psychiatrist." During his few years in active practice in Phoenix, we was not only psychiatric consultant to some of the most respected physicians in this area but, when emotional difficulties arose in physicians' families, it was usually Doctor Barrett who was consulted. He combined the faithfulness, sincerity and common sense of the old time physician with the skill and scientific accuracy of the modern psychiatrist. His passing has left a gap in the professional ranks of our society which cannot be filled.

In the history of psychiatric medicine in Arizona, he left a mark of distinction as an outstanding clinician of the highest professional accomplishments. We salute a colleague and friend, who exemplified the highest qualities of the physician, and whose memory will be honored by all who knew him.

Doctor Barrett is survived by his wife, Joann, a daughter, Brandi, his mother, Mrs. Eliza Stone Barrett, and two brothers, Tom Barrett and Sam S. Barrett, D.D.S.

Otto L. Bendheim, M.D.



# A statement to physicians concerning a new concept for feeding infants in the home

## What is "Nursette"?

The Nursette disposable formula bottle is the ultimate in simplicity and safety for routine formula feeding. The Nursette unit consists of a glass bottle already filled with Enfamil in 20 cal./oz. dilution. No further preparation is required. Just twist off the cap, attach a conventional nipple unit of choice and the Nursette bottle is ready for feeding.

The Nursette, with Ready-to-Use Enfamil formula, is available in three sizes (4, 6 and 8 oz.) to keep pace with the infant's growing appetite. It is safe to store unopened without refrigeration and feed without warming, if desired. Also, there are no cans to open, no ingredients to mix or measure, no bottles to wash and sterilize.

Although the concept of a presterilized, ready-to-use formula sealed in a glass nursing bottle seems relatively simple—the actual production of such a unit is extremely complex. Ten years of research and development were required to solve technological problems and perfect the needed processes. While bottles filled with formula are in constant motion, high heat is applied for a critically short period. The result: a sterile formula with the natural whiteness of whole milk and maximal retention of all nutritional values.

## Who uses "Nursette"?

The Nursette unit is for routine feeding of normal infants. Nursette with ready-to-use formula eliminates much of the work and worry associated with current methods of formula preparation. Consumer surveys with hundreds of mothers indicate a high preference for this new concept in infant feeding.

Infant feeding with the Nursette unit offers *practical* benefits to both the inexperienced parent and the hurried multipara—without compromising nutritional quality. In turn, only a minimum amount of your time is required for counseling anxious mothers on the problems of formula preparation.

For infant feeding in the home, the Nursette disposable formula bottle provides clinically proven Enfamil Infant Formula in the most practical and convenient form. This consistent 20 cal./oz. nutrition may be used exclusively or in conjunction with formula prepared from Enfamil concentrated liquid or powder.

As the ultimate in simplicity and safety for home feeding, the Nursette disposable formula bottle will, no doubt, interest many parents. In keeping with our dedication of "Serving All Needs in Infant Nutrition," Mead Johnson Laboratories is proud to make this new product available to you and your patients.

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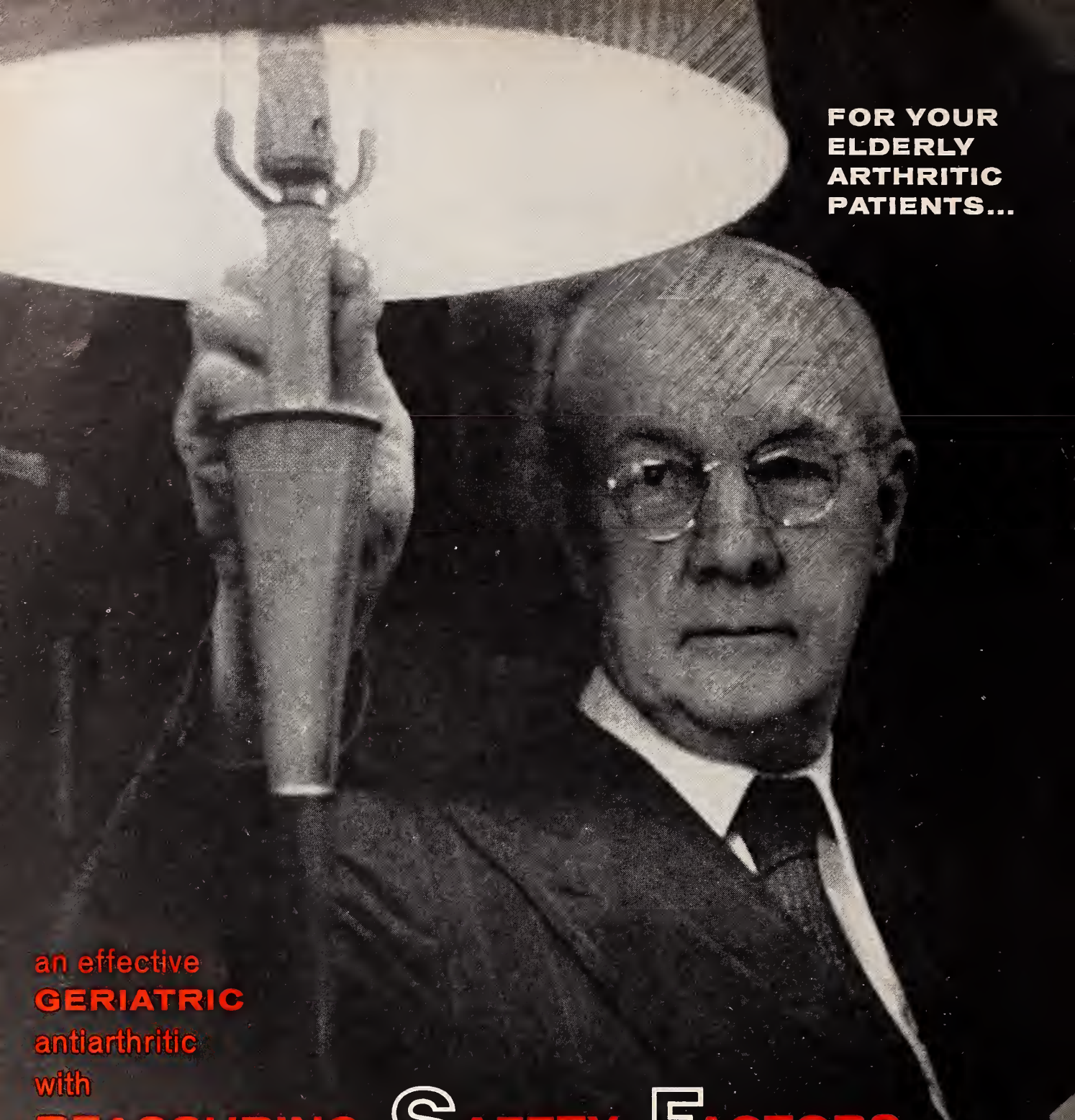
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March 9, 1964

April 3, 1964

Dr. Robert F. Lorenzen  
Editor-in-Chief  
Arizona Medicine  
550 West Thomas Road  
Phoenix, Arizona

Dear Doctor Lorenzen:

Reference is made to the February 1964 issue, and an article titled "Is It Possible to Have Health Without Welfare?" by Richard L. Durbin and Robert C. Hardy.

The following is quoted directly from their article (Page 128). "The King-Anderson Bill wisely proposes benefits throughout the full range of available medical services: In hospitals, clinics, doctor's offices, nursing homes, and in the patient's homes. This allows the patient to receive the care which most effectively and most economically meets his medical need."

May I take exception to this misrepresentation of the King-Anderson Bill. This Bill, as currently proposed, will take care of limited medical care within a general hospital, under contract to the federal government, in out-patient departments associated with these hospitals and with a deductible expense chargeable to the patient amounting to twenty dollars, and, as currently proposed, those nursing homes which are Hospital associated. The King-Anderson Bill does not cover any expense or medical care in a doctor's office or in clinics not associated with a contract hospital. King-Anderson would also allow home visits by Visiting Nurses Association.

The reference made to the King-Anderson Bill is actually those proposals made by or provisions covered by the Kerr-Mills Bill which would cover total medical cost to the medical indigent. In order to avoid misunderstanding on the part of our readers, I think that this matter should be brought to their attention.

Sincerely yours,

Arthur V. Dudley, Jr., M.D.

\* \* \* \* \*

*Mr. Durbin was advised of receipt of the above criticism of a portion of his article. The following is his reply.*

Robert F. Lorenzen, M.D.  
Editor, Arizona Medicine  
4533 N. Scottsdale Road  
Scottsdale, Arizona  
Dear Doctor Lorenzen:

Upon re-examination of my article I find that your reader is correct in part.

The King-Anderson Bill proposes coverage from 45 days to 180 days of hospitalization with the patient paying from \$20 to approximately \$90, depending upon which coverage he chooses and his length of stay.

Additionally, King-Anderson proposes coverage of:

1. All nursing home care costs up to 180 days;
2. All costs above an initial \$20 for hospital diagnostic outpatient services;
3. All costs for home health care visits by community visiting nurses and physical therapists up to 240 visits in any one year;
4. Cost of drugs used as an inpatient of a general hospital or nursing home;
5. Surgeons' and physicians' fees *when* the service is furnished by an intern or resident in an American Medical Association-approved training program; or when the services are rendered through a hospital and are in the field of pathology, radiology, anesthesiology, or physical medicine;
6. Services furnished in a nursing home facility by interns and residents in training under an American Medical Association-approved teaching program of the hospital with which the nursing home facility is affiliated.

Perhaps the bill is limiting in some other aspects of physical and economic convenience to patients; the point is that it is a sizeable step towards benefits throughout the full range of medical services. Legislation of this type must safeguard against misuse, and will usually encourage certain patterns of utilization; i.e., hospital centered, in its efforts to meet public need.

Kerr-Mills "type" legislation affords matching federal funds to states participating in the program. This legislation does not specify what services are to be covered, so coverage may or may not cover total care for medical indigents, depending upon state legislation.

Both bills can move us into a more comprehensive health care system if they are planned and



Correspondence

utilized, recognizing that the present voluntary plans are available for use by those who *can* afford to pay for their own care, and are also available for expansion to indigent and low income bracket groups.

Very truly yours,  
Richard L. Durbin  
Administrator

\* \* \* \* \*

March 4, 1964

Robert Lorenzen, M.D.  
Editor, Arizona Medicine  
550 West Thomas Road  
Phoenix, Arizona

Dear Doctor Lorenzen:

In order to keep members of the Arizona Medical Association informed of various activities of the Association, I have been asked to write you with regards to the activities of the Sub-Committee on Rehabilitation and would request that you pass this information on to your readers.

As suggested by the American Medical Association, the Arizona Medical Association maintains a committee on rehabilitation. This is a sub-committee of the Professional Committee and has, as one of its functions, the duty of maintaining and passing on information with regards to various rehabilitation aspects of medicine to members of the Association.

Rehabilitation in all its aspects has received a great deal of attention and study over the past few years and will continue to receive much attention, particularly from governmental sources.

The American Medical Association recognizes this and recognizes that the medical profession must remain ready, willing and able to contribute their share to this rapidly developing aspect of our society.

Organized medicine is encouraged to take an active part in rehabilitation planning on the local community level as well as on a state-wide and national level. Much information is available to those interested or to those who can be encouraged to become interested in this aspect of medicine.

Information is also available to members of the Association or others interested with regards to rehabilitation facilities in and out of Arizona.

There are many excellent facilities available in Arizona with regards to specific rehabilitation problems. These are primarily located in the

center of greater population. There are, however, many notable deficiencies in the field of rehabilitation, both in and out of Arizona.

Much rehabilitation service has to be sought in other major teaching and treatment centers.

The Sub-Committee on Rehabilitation has an ever increasing file of information with regards to rehabilitation facilities over the country which is available on request.

We would like to encourage the use of this information and request that any doctor or other interested individual who has a rehabilitation problem or seeks rehabilitation information take advantage of this information file and request such from me or from Mr. Carpenter at the Medical Association office.

Thank you very much, Doctor Lorenzen, for passing this information on.

Very truly yours,  
Ray Fife, M.D.  
Sub-Committee  
on Rehabilitation

\* \* \* \* \*

March 12, 1964

Robert F. Lorenzen, M.D.  
Editor, Arizona Medicine  
P.O. Box 128  
Scottsdale, Arizona

Dear Bob:

I wonder if our State Journal is in a sufficiently solvent economic status so as to permit us to discontinue the advertising of tobacco or tobacco products in our publication. It would seem that we, as doctors of medicine, should certainly not extend even tacit approval of the use of tobacco at this time.

In a not so serious vein, why don't we abbreviate Arizona Medical Association as AZMA?

Cordially  
T. Richard Gregory, M.D.

\* \* \* \* \*

*Editor's note — Although mounting evidence seems to implicate cigarette smoking as a health hazard, our State Medical Society has not yet indicated any official position in this regard. If the Society takes a position officially opposing cigarette smoking, we would then feel it inconsistent to accept advertising from cigarette manufacturers.*





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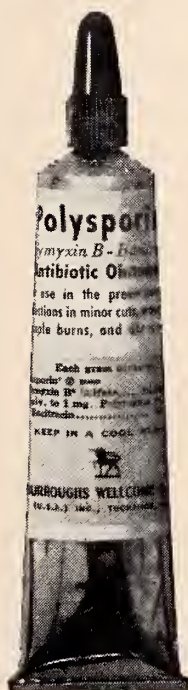
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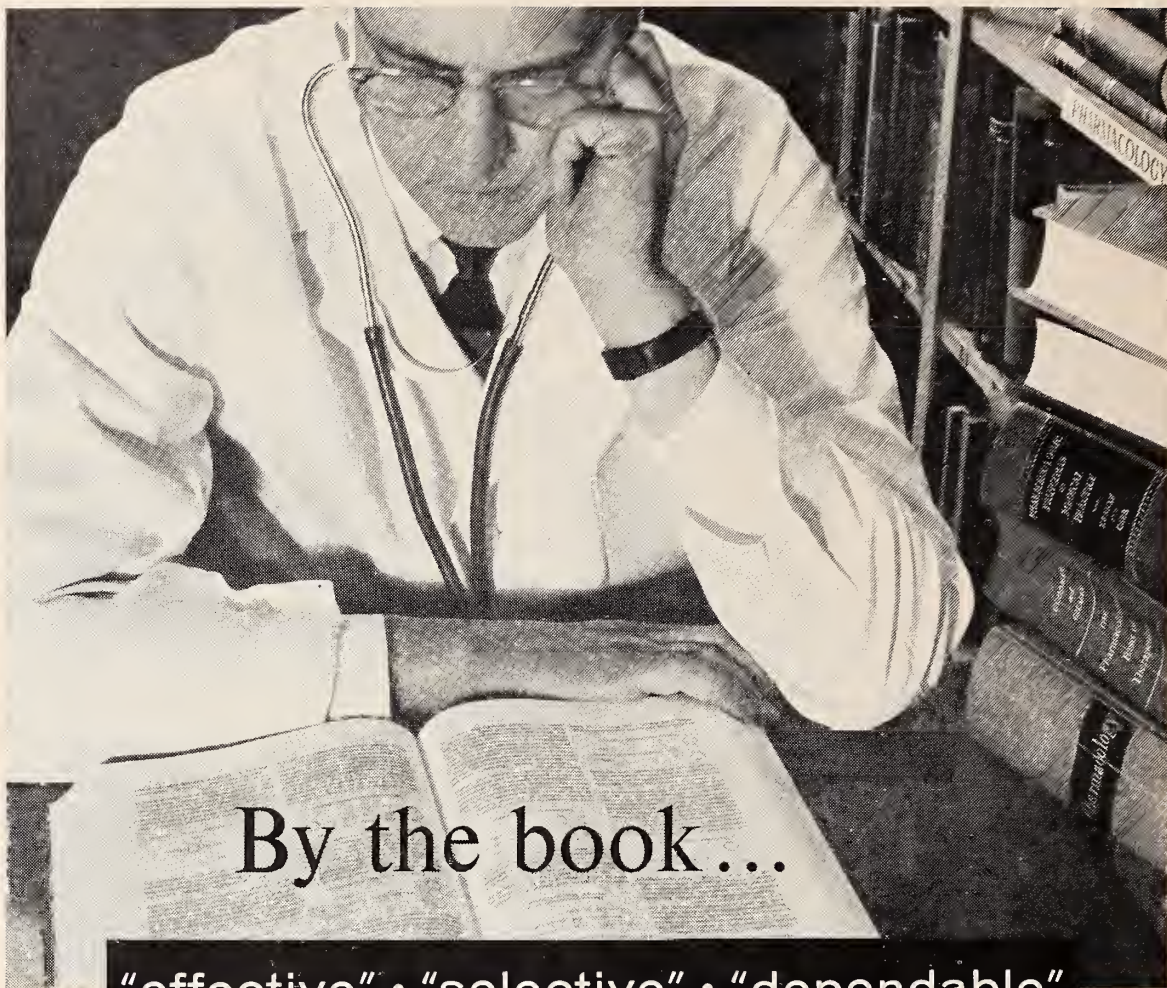
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Carl E. Behle

### BEHLE APPOINTED

Carl E. Behle has been appointed professional relations director for Arizona Blue Cross and Blue Shield, and has already taken over his new assignment. Behle has spent nine years with the Oklahoma Blue Cross and Blue Shield plan. His latest capacity was as professional relations director.

Both the physician relation and hospital relations departments will be under his direction.

Behle has been a resident of Tulsa with his wife and two children, and is a graduate of Temple University.

## IMPORTANT ANNOUNCEMENT

### Re: VACCINIA IMMUNE GLOBULIN

Doctor Charles A. L. Stephens, Chairman, Pima County Medical Society's Advisory Committee to the Southern Arizona Red Cross Blood Center, wishes to call your attention to the availability of a blood fraction that is specific for the treatment of certain vaccination complications, such as eczema vaccinatum, vaccinia necrosum, or accidental eye inoculation.

It's called *VACCINA IMMUNE GLOBULIN*, and Red Cross (the only source) will deliver it to you as rapidly as possible whenever you need it, day or night.

Because the supply is limited and would soon be dissipated if *VIG* were used when not indicated, seven specialists across the nation have volunteered to act as consultants.

If *you* should require *VIG* for a patient, the following routine has been established for obtaining this product:

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Dr. Henry K. Silver, University of Colorado Medical Center, Denver, DUdley 8-4511, (Residence — FL 5-7990).

The consultant will confirm the need for *VIG* and will telephone the Red Cross Blood Center here. Red Cross will arrange immediate delivery by the most rapid means available.

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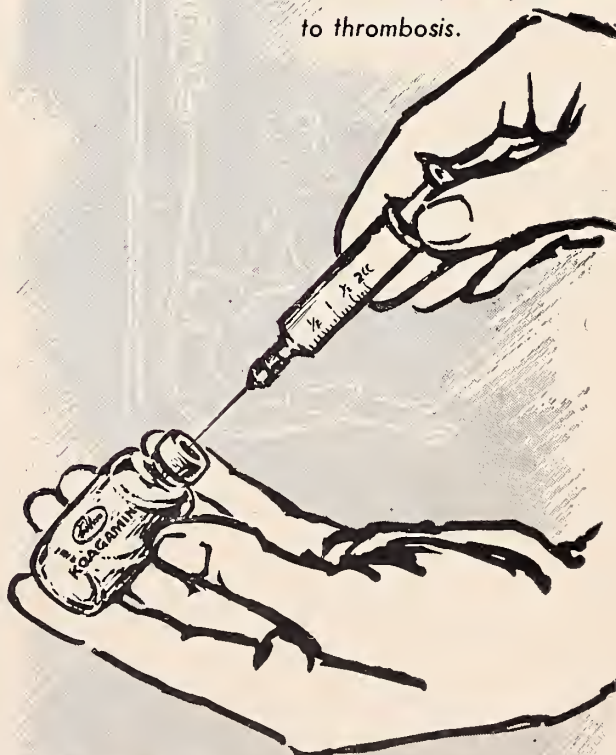
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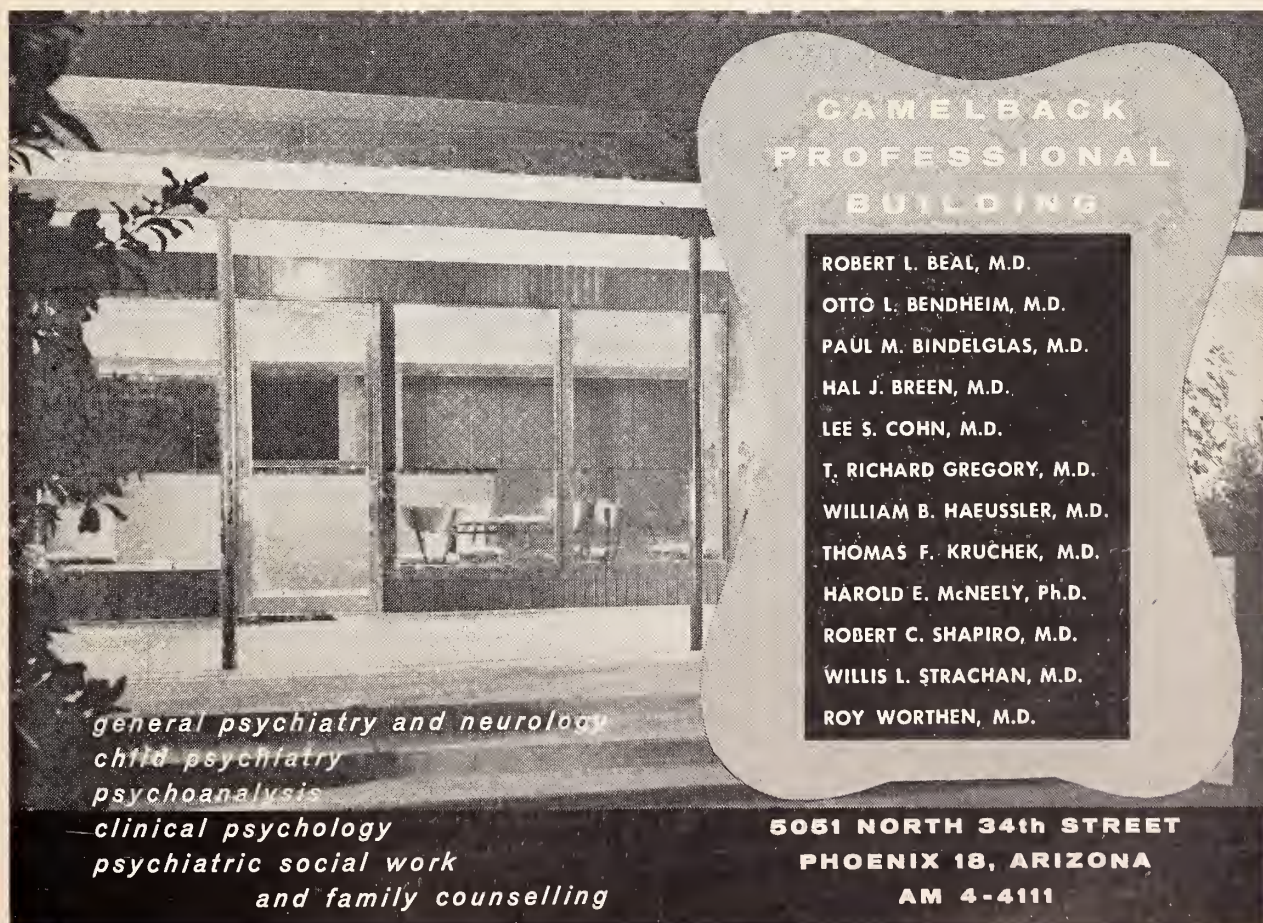
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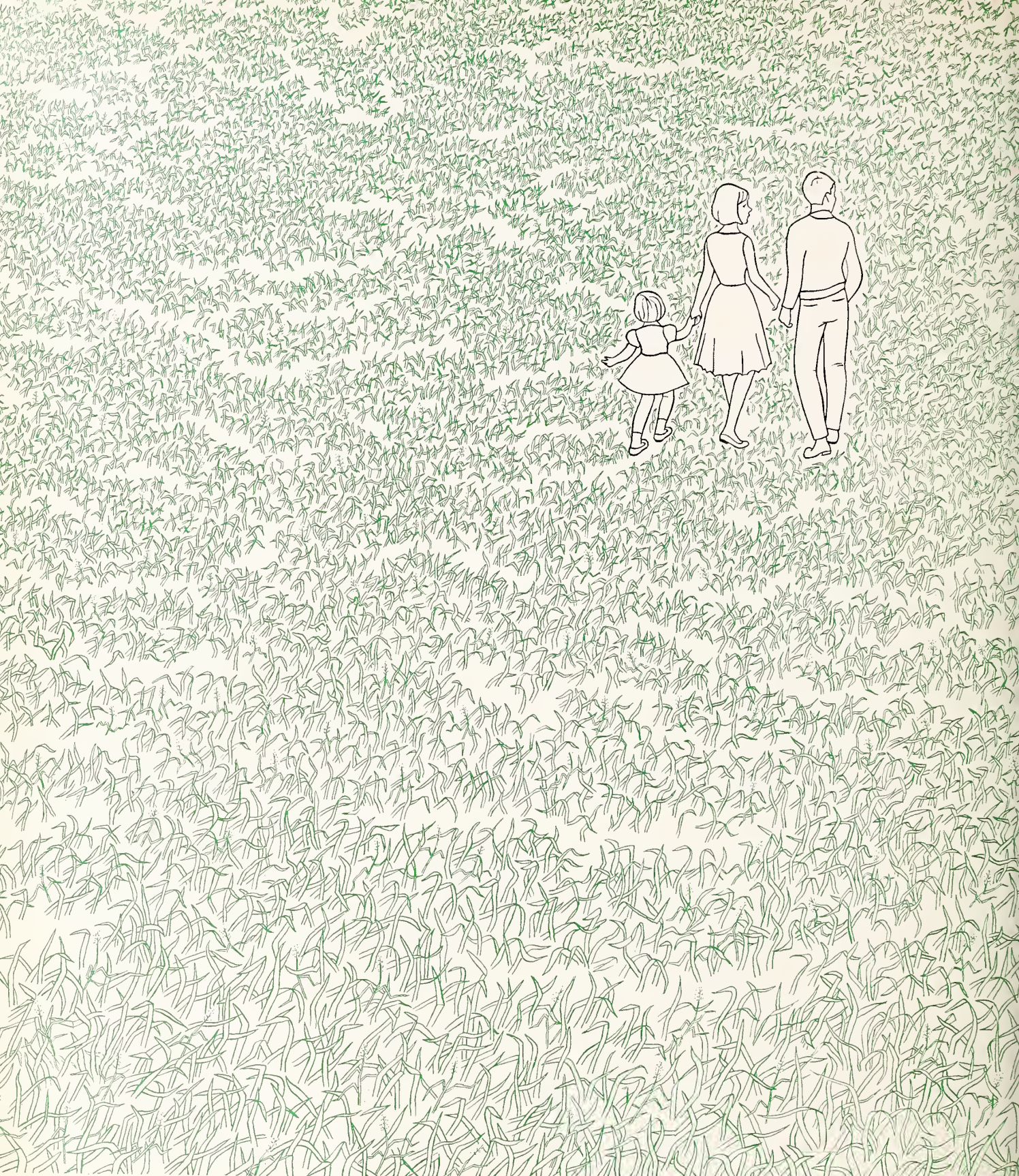
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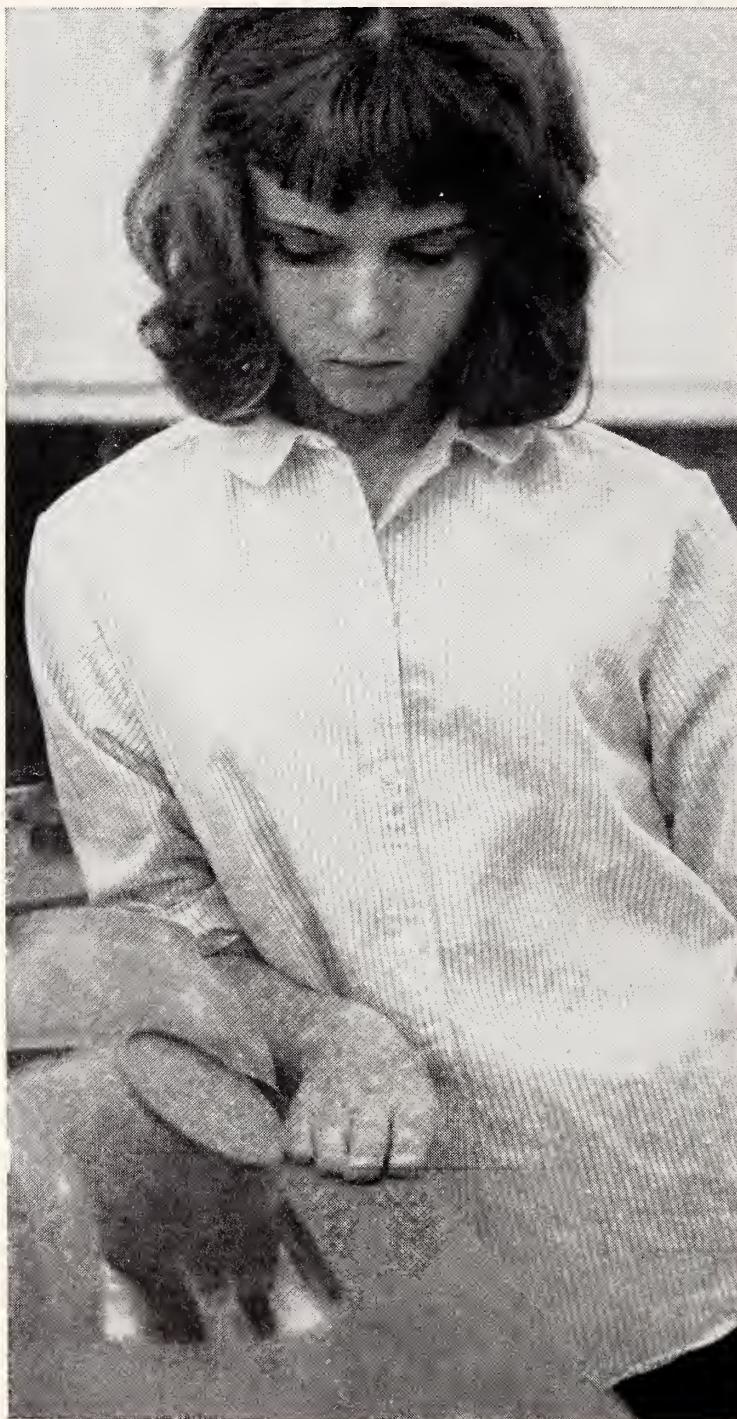
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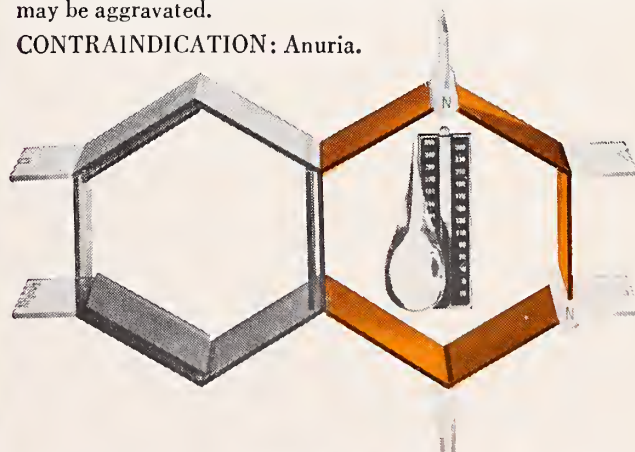
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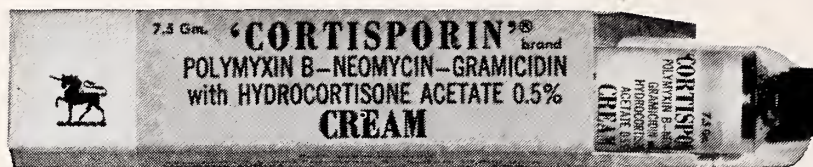


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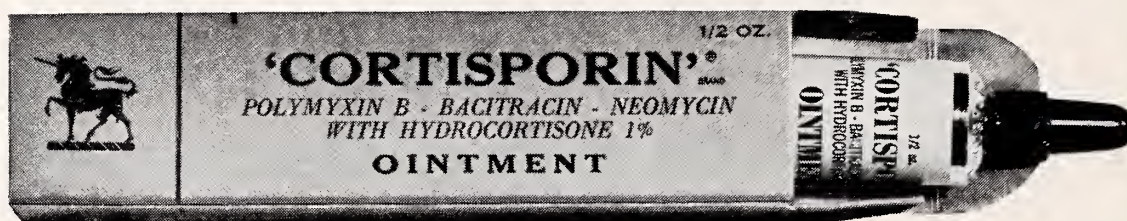
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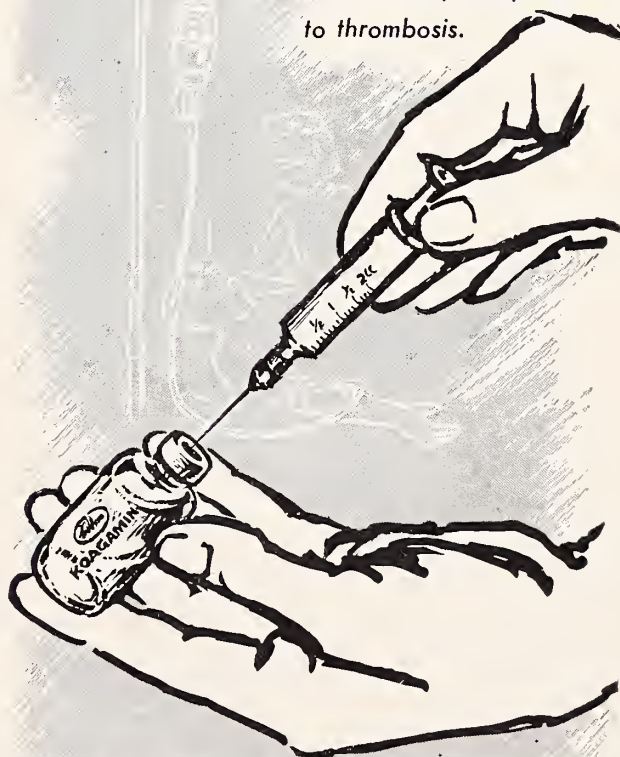
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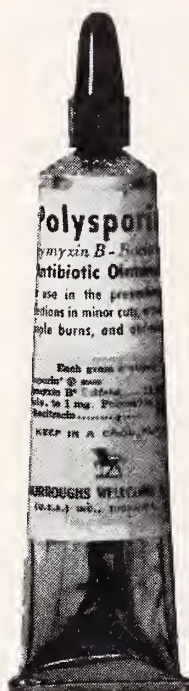
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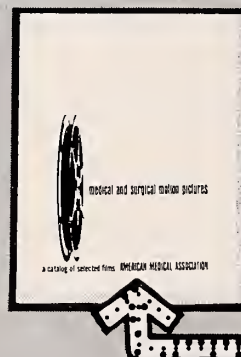
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Dr. Griffith



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## Original Articles

### Heart Disease and Pregnancy Part I

# "Cardiac Physiology In Pregnancy"

by George C. Griffith, M.D.  
and Richard P. Boggs, M.D.

The normal cardio-vascular changes that occur in the pregnant patient can be confused with cardiac pathology. This article gives a succinct review of the expectative alterations in cardio physiology during pregnancy.

## Introduction

The normal heart in a pregnant woman tolerates the altered hemodynamics of pregnancy without causing any significant symptoms or signs which attract the attention of the woman or the obstetrician. The additional load placed upon an abnormal heart may cause significant symptoms.

In order to assist the physician in evaluating the work load imposed upon the heart by pregnancy, all of the factors used to judge the work capacity of the heart are herewith evaluated.

### I. Pulse

Early in pregnancy, the resting maternal pulse begins to increase. The average peak of 10 beats per minute above the prepregnant level is attained about the eighth month.<sup>1</sup> Immediately post-partum the rate usually drops, but this is not consistent. After some Caesarian sections a rapid, prompt drop is recorded, similar to that

seen following the closure of an A-V fistula; this however, is not uniformly seen.

During labor the maternal<sup>2</sup> pulse exceeds 110 in only 10% of normal labors.<sup>3</sup> A pulse rate remaining over 110 for a period of 45 minutes in the absence of other obvious causes strongly suggests congestive failure.<sup>4</sup>

### II. Blood Pressure

The mean basal arterial blood pressure does not change markedly during a normal pregnancy.<sup>5</sup> There is a tendency for the average diastolic and systolic pressures to decrease from the fourth through the ninth lunar months, and to increase during the tenth lunar month. There is a disproportionate decrease between the systolic and diastolic pressures resulting in an increase in the pulse pressure. This may give rise to the flushing of the skin and peripheral capillary pulsation in the nail beds. It is possible that the increased pulse pressure may be dependent in part on the A-V shunt in the placenta.<sup>6</sup> However, after delivery there is no regular, marked elevation in the diastolic pressure as

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would be expected following the closure of an A-V shunt.<sup>2</sup>

### III. Venous Pressure

The venous pressure increases progressively in the legs, but remains near normal in the arm veins.<sup>7</sup> In general the arm venous pressures were higher in early pregnancy, dropped from the sixth to the tenth months, and were again higher at term. All the values, however, were within the normal range of 3-12 cm. of water.

Among the normal patients having vaginal deliveries the venous pressures found during the first stage of labor were below the normal limit of 12. Some were only slightly elevated. In the second stage, all the pressures were within normal limits if taken between pains.<sup>2</sup>

In normal deliveries in patients receiving oxytocics the venous pressures slowly increased within two hours after delivery, but never exceeded the normal limits. The mean increase is 6.4 cm. of water, and the return to normal occurs by the second or third post-partum day.<sup>2</sup> This change is seen following Caesarian section, so it cannot be attributed to labor. It is not seen when the usual oxytocic drugs are omitted.

When evaluating ankle edema during pregnancy, it is well to visualize the changes in venous pressure in the extremities. The pressure in the femoral veins is uniformly elevated. Different investigations report average increases from 15.8 to 20.6 cm. of water. These values promptly fall to normal post-partum. The mechanism of the increased pressure depends upon two factors: 1. mechanical obstruction of the iliac veins, 2. increased blood flow into the veins from the placental site. The venous pressure changes, sodium retention and lowered effective osmotic pressure per unit of plasma (due to dilution) combine to produce a slight amount of edema in approximately 27% of normal pregnant women.<sup>6</sup>

### IV. Circulation Times

All the arm-to-carotid sinus times fall within normal limits. The charted values, however, reveal that during early pregnancy the rate is normal. From the 17th to 36th weeks the flow accelerates and then decelerates just prior to term. The average circulation time was 12.4 sec. in the first trimester, and 10.2 sec. in the third trimester. Post-partum increases are seen with return to normal levels by the seventh post-partum week.

### V. Vital Capacity

Conflicting reports are seen concerning vital capacity during pregnancy. Most carefully done series refute the older concept that the enlarging uterus, by mechanical pressure, decreases the vital capacity. Actually the vital capacity increases from the fifth month, reaching the greatest volume in the tenth lunar month. After delivery there is a sharp decrease in vital capacity. The post-partum decrease lasts about two or three days, and then gradually returns to normal.<sup>2,6,8,9</sup> The average changes were 3300 cc. at the fifth month; 3455 cc. at the tenth month. After delivery the vital capacity dropped from 3455 cc. to an average of 3204 cc. for a mean loss of 201 cc.

Several factors may explain the increased vital capacity during pregnancy. The subcostal angle is increased, as is the circumference of the chest. The long diameter of the chest is decreased, but the diaphragm moves normally under the fluoroscope. Even with twins and polyhydramnios the vital capacity increases until delivery, then decreases.

Gorman and Thomson, with protractor measurements, demonstrated that the mobility of the sterno-manubrial joint is increased during pregnancy.<sup>10</sup> Most probably the relaxation of the ligaments and separation of the symphysis pubis seen in pregnancy is due to high estrogen levels and water retention. The relaxation of the ligaments is not seen in the absence of high estrogen levels. The mobility of the sterno-manubrial joint is increased early in pregnancy, before the mechanical effects of the enlarging uterus come into play.

### VI. Blood Volume

There is a progressive increase in both plasma volume and red cell mass resulting in an increase in total blood volume from early in pregnancy through the ninth lunar month. The greatest increase occurs in the plasma volume, explaining in part the decrease in hematocrit in pregnancy.<sup>5,11</sup> The average peak in blood volume is 30%; in plasma volume is 40%, and in the erythrocytes, 20%. The actual percentage increases for blood volume, however, vary quite widely depending upon the method of measurement. By the Gibson and Evans blue A20 dye method, there is an average increase of 65% over the average normal nonpregnant state. This de-



creases after the ninth lunar month to about 50% above normal at term. Dieckman, using the Keith Rountree method with congo red, reports a 25% increase of plasma volume at term.<sup>12</sup> McLennan and Thovin report a 41% increased plasma volume at term and a 32% increase in total blood volume. The volumes tend to drop toward normal immediately post-partum. The normal blood loss contributes to this. By the end of the first post-partum week the values are usually normal. In some instances elevation may persist into the second week.<sup>13</sup>

## VII. Cardiac Output

Cardiac output increases progressively from the 12th or 16th week to the 25th or 30th week, at which time it is 30-50% above the prepregnant level. There is also a gradual elevation of O<sub>2</sub> consumption up 15% to 25% at term over non-pregnant determinations. In the last 8-10 weeks of pregnancy, cardiac output decreases, finally returning to the pregravid level about two weeks post-partum.<sup>14</sup> A temporary sudden increase in cardiac output may occur immediately after delivery due to increased venous return from the extremities and the contracted empty uterus.<sup>15</sup> Cardiac work increases up to 50% (parallels increase in cardiac output).

## VIII. Sodium Balance

Sodium retention appears to be related to increasing concentrations of estrogen and increased secretion of aldosterone during pregnancy. Aldosterone concentration rises sharply after the third month of pregnancy, and remains elevated throughout. There is also a progressive increase in total body water to the end of pregnancy. The steroid levels fall to normal by the 3rd to 5th post-partum day, resulting in a sodium diuresis and weight reduction.<sup>16,1</sup> Potassium levels do not follow the sodium levels, but late in pregnancy and during the puerperium potassium is retained.<sup>17</sup>

## IX. Heart Sounds

In attempting to evaluate cardiac sounds, great care must be exercised by the physician when first examining a pregnant woman. The anatomic and hemodynamic changes of pregnancy may alter the characteristics of an organic heart lesion, resulting in an incorrect diagnosis. These alterations may also result in the diagnosis of heart disease in the normal pregnant patient who in reality has *no* cardiac pathology.

Extra systoles may be found in one-third to one-half of pregnant women. The mitral first sound is often loud and the pulmonic second sound is usually accentuated and often reduplicated. It is only by careful auscultation that the experienced physician will avoid the trap of misinterpretation. Splitting of the first and second heart sounds; a normal diastolic third sound; sinus arrhythmias; systolic clicks and other variations of normal auscultatory phenomena occur and are not in themselves evidence of heart disease.

A certain per cent of pregnant women will have intracardiac and/or extracardiac murmurs which do not represent organic heart disease, but are secondary to the hemodynamic changes of pregnancy. Of the *intracardiac murmurs*, the great majority are systolic. Pulmonic systolic murmurs occur almost universally, if one examines the pregnant woman frequently and in various positions and phases of respiration. These murmurs vary widely in loudness, pitch and transmission. Most are probably secondary to increased flow across the valves.

The *extracardiac murmurs* have been termed "mammary souffle" by Scott and Murphy.<sup>18</sup> These may be systolic only, but the majority have a diastolic component. Many are continuous throughout most of the cardiac cycle, and may be confused with patent ductus arteriosus, which is one of the most common congenital cardiac lesions found with pregnancy. It is important to differentiate the "mammary souffle" from the murmurs of organic heart disease. Characteristics of the mammary souffle are:

1. The murmur may be heard in unusual areas and its location and auscultatory characteristics may change frequently.
2. The souffle murmur is best heard when the patient is erect, and is rarely transmitted to the neck or back.
3. The murmur is frequently obliterated by direct compression with the stethoscope over the point of maximum intensity or pressure just lateral to the stethoscope. This ability to obliterate the murmur by compression differentiates the souffle from the organic cardiac lesions.

## X. Cardiac Shadow

The usual criterion of heart-chest ratio must be relaxed somewhat during pregnancy to avoid the erroneous diagnosis of cardiomegaly which may be created by the enlarging uterus as it



## Original Articles

elevates the diaphragm and widens the transverse diameter of the heart. The area of cardiac dullness and the size of the cardiac shadow by X-ray can increase in pregnancy, but this is not a universal finding.

In patients whose heart size does change appreciably during pregnancy, a change is also seen in the relation between the transverse and long diameters of the chest. Patients whose heart shadows remain essentially unchanged show little change in the ratio between the transverse and long diameters of the chest. Since changes in the relationship between the heart, chest, and diaphragm sufficient to account for the change observed in the cardiac shadow do occur, it seems unnecessary to postulate hypertrophy or dilatation, although some degree of both may occur.

Because 91% to 95% of the cardiacs seen during pregnancy have rheumatic lesions, the cardiac shadow as seen from the oblique view is important. Hollander and Crawford did esophograms on 18 normal pregnant women and found a marked indentation of the esophagus in two cases and some indentation in eight others.<sup>19</sup>

The cardiac silhouette may reveal a straightened left border during normal gestation suggesting rheumatic mitral disease. In general, the changes seen during pregnancy are similar to those seen in mitral disease. These authors conclude that the changes are due to the increased blood volume and dilatation rather than hypertrophy. Here again, the changes in the transverse and long diameter of the chest govern the picture as in the A-P views.

### XI. The Electrocardiogram

The most outstanding changes occurring in the electrocardiogram during the normal pregnancy are confined to lead III.<sup>19</sup> A prominent and at times deep Q wave and inversion of the T wave are seen in many instances. Some tracings reveal negative T waves with no alteration of the Q waves. Usually no abnormalities of the QRS complex and the RS-T segment are seen.<sup>20</sup>

Left axis deviation is further evidence of a shift of the heart during pregnancy. Although there is no absolute or invariable rate of electrical axis deviation, there is a shift to the left during the first and second trimesters of pregnancy. During the third trimester there is a shift to the right. When the shifts are plotted,

the angles vary as much as 28 degrees, but in general the average is 15 degrees.

All of the electrocardiographic changes may be explained on the basis of positional shift of the heart. The fact that the tracings rapidly return to normal post-partum further supports this view. The changes are also more marked when the height of the fundus is greatest, and the diaphragm most markedly elevated, with the resulting positional change of the heart.

### Summary

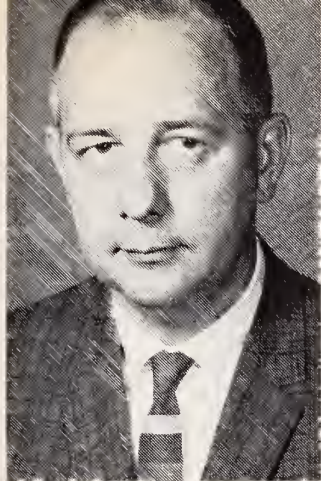
From the foregoing brief review it becomes obvious that pregnancy imposes a burden on the normal maternal heart. This added load must be carefully balanced against the remaining functional reserve in the cardiac patient. It is only by repeated examination at frequent intervals by the thoughtful physician that some of the diagnostic pitfalls discussed earlier can be avoided. The next section deals with the problems of the pregnant cardiac patient.

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*Part II will appear in Volume 21, Number 7*





Dr. Sommerville

# “Small Bowel Biopsy—A Review”

by  
Robert L. Sommerville, M.D.

Per-oral small bowel biopsy is one of the springboards from which we are rapidly developing a dynamic picture of the area between the pylorus and the ileocecal valve. The author provides an excellent description of the technique of small bowel biopsy. He also presents case material illustrative of how this procedure is helping us to understand the nature of the mal-absorption syndromes.

**P**ER-ORAL small bowel biopsy was first introduced in 1955. This valuable diagnostic procedure can be performed easily with instruments operating on hydraulic and suction principles<sup>1,5,14,15</sup> or with the Crosby capsule.<sup>3</sup> The small bowel mucosal biopsies to be presented here were obtained using the latter instrument.

The small metal capsule used by Crosby<sup>3</sup> has a vent on one side. (Figure 1.)

One end of a small coiled spring fits into the side of the cylindrical, rotating metal block; one edge of which bears the knife blade. The spring passes around the hub of this metal block and the loop at the opposite end of the spring fits over a metal peg seen projecting upward from the base of the capsule. The spring is cocked by rotating the block counter-clockwise until a notch on the upper surface of the block is anchored to another peg that projects on the circular wall of the capsule. Once the knife blade and spring are fixed within the capsule a small piece of rubber dental dam is placed over the open end of the capsule and the metal lid is fitted into place. The spring mechanism is activated by applying negative pressure with a 50cc. syringe at the proximal

end of the polyethylene tubing. This draws a small portion of mucosa into the vent on the side of the capsule making the latter air tight. Continued negative pressure causes the rubber dental dam to impinge on the top of the knife, thereby releasing the spring mechanism. As the blade swings past the vent an 8 millimeter sample of mucosa containing muscularis mucosae is cut off and trapped within the capsule. If the capsule has fired properly, gentle attempts to introduce air into the tubing are met with resistance. This maneuver must be a cautious one since excessive positive pressure will blow the

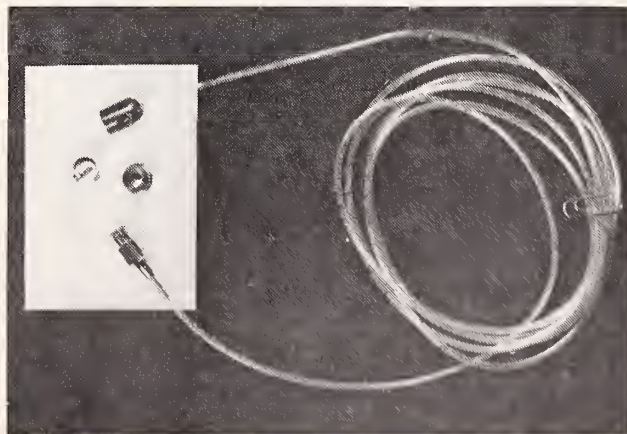


Figure 1. Crosby capsule unassembled. The component parts of the capsule are identified on the white background. Above: Capsule. Below: syringe attachment. Left: metal block bearing knife edge and Right: Lid.

Presented at the Arizona Regional Meeting of the American College of Physicians, December 1, 1962.

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Figure 2a. One half hour film of small bowel study in a patient with non-tropical sprue showing coarse mucosal pattern in proximal jejunum, the site most appropriate for biopsy.

lid off the capsule and the biopsy may be lost.

The biopsy procedure is most conveniently carried out in the early morning after an overnight fast. Little or no sedation is required and the biopsy can be done easily as an office procedure. The patient first swallows a small amount of water. The capsule is placed on the posterior aspect of the tongue and the patient is requested to swallow. Once the capsule starts down the tube is fed rapidly behind it. When the capsule is in the stomach the tubing is withdrawn slowly until the resistance of the cardia is felt. The tubing is then advanced four inches and the patient is placed in the right lateral decubitus position for 30 minutes. Normal saline is used to fill the tubing and capsule and the proximal end of the tubing is clamped. After reclining for thirty minutes the patient is permitted ambulation and may even attend to his work until time for the flat film of the abdomen three or four hours later. During this interval the tubing is advanced one inch every fifteen minutes.

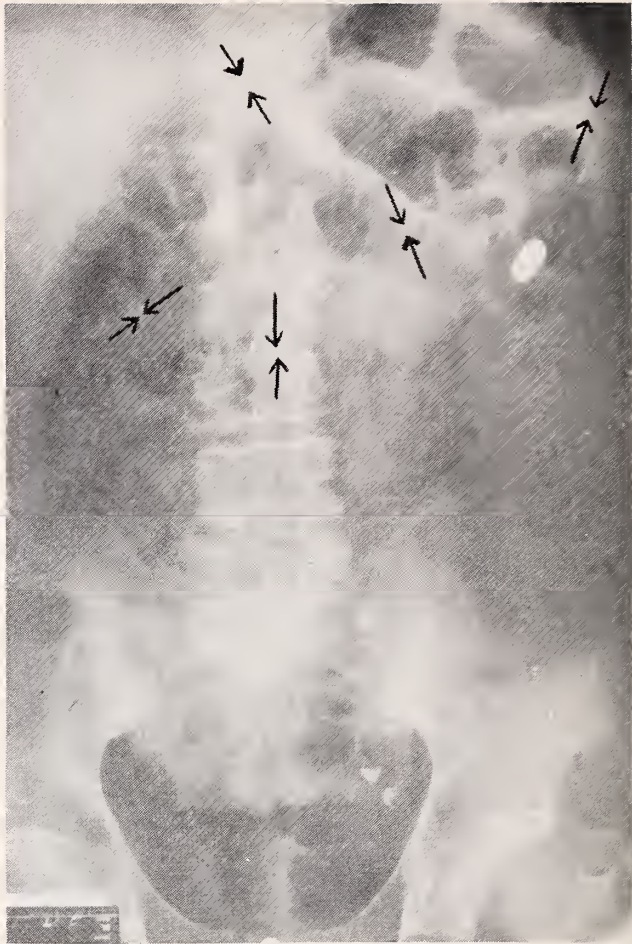


Figure 2b. Flat film of the abdomen of a patient with non-tropical sprue showing capsule located in the proximal jejunum. The level of the capsule in the small intestine can be determined by noting the configuration of the fine nickel wire in the tubing (see arrows) and comparisons with the prior barium study (a).

The distance the capsule has traveled can be determined accurately by employing a modification of the original instrument. This consists of inserting a fine nickel wire through the entire length of the tubing. This can easily be seen on the x-ray, figure 2.

When the capsule is in the desired location the biopsy is taken and the capsule withdrawn by steady gentle traction on the tubing. Usually the capsule hesitates briefly at the pylorus and at the cardia; having the patient swallow facilitates removal past the latter site. The patient may resume his usual diet after removal of the capsule.

The biopsy is removed from the capsule and placed on the tip of the finger mucosal surface downward. Since the specimen usually contains muscularis mucosae, the edges of the biopsy tend to roll inward. These are teased out gently with a pin, and a piece of blotting paper is applied; this procedure prevents re-curling of the biopsy in the fixative and permits proper orientation for



microscopic sections perpendicular to the mucosal surface. Gross examination with a hand lens at this point often gives valuable information as to the presence of atrophy and the degree of vascularity.

Regardless of the type of instrument used, per-oral small bowel mucosal biopsy is a simple and reliable diagnostic procedure. The only contraindications to the procedure employing the Crosby capsule are 1) a prolonged, fixed prothrombin time that does not respond to parenteral Vitamin K, 2) any obstructive or ulcerating lesion in the esophagus, stomach or duodenum and 3) esophageal varices. Roentgenographic examination of the upper gastrointestinal tract and small bowel is necessary to exclude any contraindication to passage of the tube and is helpful in locating the site for biopsy.

The primary indication for small bowel mucosal biopsy is steatorrhea. It is most rewarding in tropical and non-tropical sprue,<sup>4,9,10,12,16,17,19</sup> celiac disease,<sup>16,17</sup> Whipple's disease,<sup>8,19</sup> amyloidosis,<sup>7</sup> diabetic steatorrhea,<sup>2</sup> and diverticulosis of the small intestine.<sup>11,18</sup> Other conditions not necessarily related to steatorrhea but in which diagnostic information can be obtained include lymphoma, hemochromatosis,<sup>6</sup> and carcinoma. Finally, certain situations may be considered as relative indications since mucosal changes are mild, infrequent or absent. These include steatorrhea secondary to pancreatic insufficiency, gastric resection, extensive small bowel resection and neomycin. However, if the patient presents

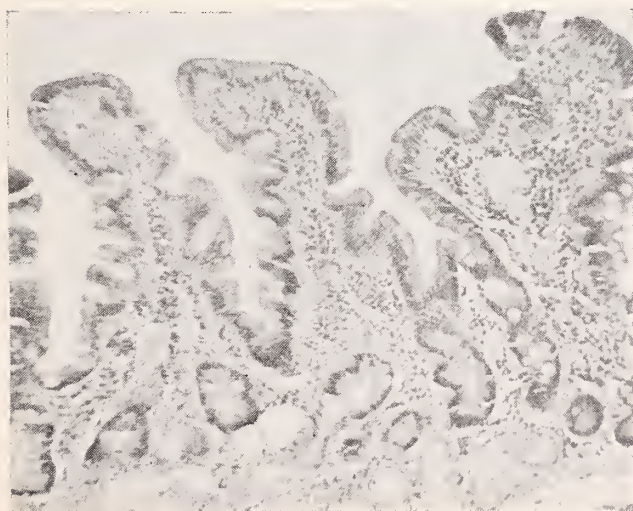


Figure 3a. Normal jejunal mucosa. Low power photomicrograph (x 100). Showing absorptive villi above which comprise approximately two thirds the thickness of the mucosa. The remainder of the mucosal thickness consists of the crypts of Lieberkuhn and scattered Brunner's glands which in this individual extended into the proximal jejunum.

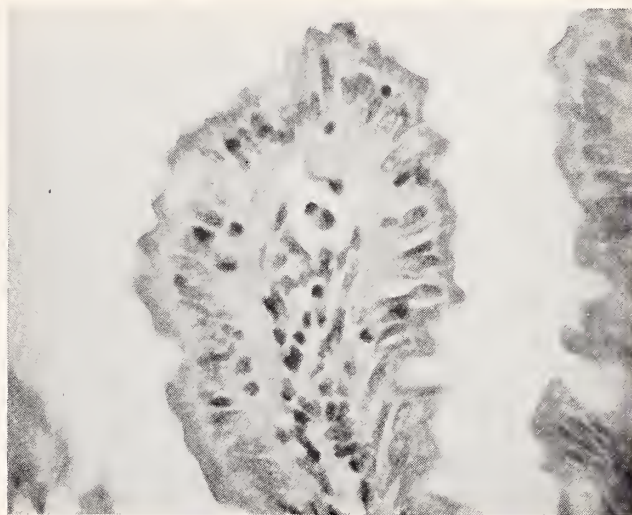


Figure 3b. High power (x 430) tip of villus showed prominent brush border covering the luminal surface of the mucosal cells

persistent localized tenderness, fever or melena, abdominal exploration is indicated and a full thickness small bowel biopsy can be taken at that time.

Complications with this procedure have been few. The incidence of bleeding of a significant degree has been reported to be less than 1 per cent. Since biopsy specimens obtained with the Crosby capsule consistently bear only a small portion of muscularis mucosae, perforation is highly improbable. Failure to obtain a biopsy varies with the instrument employed; this is in the order of 5 per cent with the Crosby capsule,<sup>3</sup> and up to 18 per cent with the modified multipurpose tube of Wood.<sup>1</sup> We have done sixty biopsies, mostly in adults, with the Crosby capsule and a mishap occurred in only one instance. This was in a sixteen year old boy with celiac disease in whom the knife blade failed to cut clean and the capsule could not be removed until the small tag of tissue holding it had sloughed. The patient experienced no untoward symptoms but the biopsy specimen autolysed. In some instances where biopsy of the distal ileum is performed the patient experiences abdominal pain during withdrawal of the instrument. Within six to twelve hours the abdominal pain increases and there may be rebound tenderness. The "post biopsy syndrome" has been attributed to incomplete cutting of the specimen and retraction of the small bowel on withdrawal.<sup>5</sup> The latter has been noted during fluoroscopy.

The Crosby capsule permits mucosal biopsy of the stomach and any level of the small intestine. However, only one biopsy can be taken since the



spring mechanism cannot be reset without removing the capsule. The modified Wood multipurpose tube overcomes this disadvantage.

Interpretation of the histologic findings requires some familiarity with the normal. Fig. 3 shows a mucosal biopsy of the proximal jejunum in a normal individual.

The epithelium consists of two distinct histologic zones, 1) the germinal crypt and 2) the absorptive villi; the latter comprising sixty to eighty per cent of the thickness of the mucosa.<sup>12</sup> On the basis of isotopic studies and mitotic counts,<sup>12,19</sup> it has been estimated that there is continuous renewal of the mucosal epithelium every 1.6 days,<sup>12</sup> cells migrating from the crypts to the tip of the villus where they are shed. During migration, the cells become taller and lose their basophilic stain, Figure 3b. The nuclei of the crypt cells are arranged basally but as the tip of the villus is approached the nuclei move to the middle portion of the cell. The lamina propria contains capillaries, lymphatics, a moderate number of lymphocytes, plasma cells and eosinophiles. Certain artefacts which may be misleading, include blunting of the villi seen in tangential cuts or in sections taken from the edge of the biopsy specimen as well as normal blunting of the villi seen in duodenal mucosal biopsies overlying Brunner's glands.

Histo-chemical studies<sup>12</sup> of the jejunal epithelium reveal the principal site of activity of enzymes such as esterase, phosphatase and succinic dehydrogenase to be in the absorptive cells of the villi. Study of the ultra-structure of the surface of the epithelial cell by electron microscopy<sup>9</sup> has shown that the "brush border" seen with ordinary light microscopy consists of several hundred microvilli about 1 micron in length. It has been estimated by these authors that the microvilli increase the apical surface of the cell twenty fold. Such studies have revised concepts about the physiology and pathophysiology of the small intestinal epithelium and no doubt will lead to further discoveries having practical application in the management of small bowel diseases.

The significant changes in the small intestinal epithelium of importance from a diagnostic standpoint to the internist, however, are readily seen with light microscopy. The diagnosis of tropical and non-tropical sprue can be made most directly today by per-oral small bowel biopsy. The following case history will illustrate.

### Case History

A 70-year-old woman was first seen in September of 1961 with a history of "bowel trouble for 12 years." During this time the patient had experienced persistent diarrhea with periodic increase in its severity for three to four weeks at a time. Usually she had one or two explosive, foul, watery stools after each meal and three or four at night. The patient had lost thirty pounds weight over the three years before her initial visit. There had never been any persistent abdominal pain, fever or melena.

Physical examination revealed the patient's height to be 5', weight 103 pounds, blood pressure 110 systolic, 70 diastolic, pulse 60 and temperature 98 degrees. There was evidence of recent weight loss and minimal glossitis. The liver edge barely extended below the right costal margin with deep inspiration but was not enlarged to percussion. The spleen was not felt. The stool on the examining finger appeared to contain an excessive quantity of fat. The general physical examination was otherwise not remarkable.

Laboratory examination revealed a normal urinalysis. The hemoglobin was 13.5 grams, erythrocytes 4,200,000, white blood count 9050 with 57 neutrophils, 35 lymphocytes, 4 monocytes, 4 eosinophiles. The serology was negative. A sedimentation rate was 32 millimeters in the first hour (Westergren). The urea nitrogen was 16.8 milligrams, serum bilirubin 0.3 milligrams direct and 0.4 milligrams total, alkaline phosphatase 16.0 units (KA) albumin 6.5 grams, globulin 0.8 grams, prothrombin 17 seconds (control 15 seconds and stool guaiac negative. Qualitative examination of the stool for excess fat show increased amounts. A glucose tolerance test without prior carbohydrate loading showed a fasting blood sugar of 95 milligrams (Folin and Wu) with 153, 153, 153, and 122 milligrams on the one-half hour, one hour, two hour, and three hour blood samples respectively. A 5-hour xylose tolerance test revealed a urinary excretion of 2.5 grams. (Normal 6 grams plus or minus 2 grams.) Roentgenographic examination of the small intestine showed characteristic coarse mucosal folds clumping and segmentation of the barium and a slow small bowel transit time.

A per-oral small bowel mucosal biopsy was performed using the Crosby capsule. See Figure 4. Shortening and blunting of the villi with elongation of the crypt and a decrease in epi-





Figure 4a. Low power photomicrograph (x 100) showing blunting and fusion of villi and elongation of crypts of Lieberkuhn. Compare with Figure 3a.

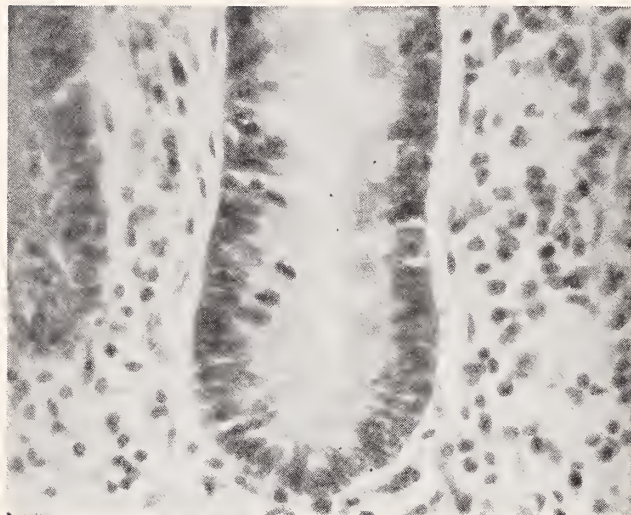


Figure 4b. High power (x 430) same patient showing increased number of mitoses in the crypt of Lieberkuhn.

thelial density are the most striking histologic changes noted. (Figure 4.) Non-tropical Sprue.

The inflammatory infiltrate in the edematous lamina propria may be considerable. A higher mitotic rate than normal is noted in the crypt cells, Figure 4b.

Epithelial mitoses in normal epithelium are found in the crypts and rarely in the villi. In sprue the mitoses are also frequent in the more superficial zones of the villi where the cells are less columnar. Electron microscopic studies have shown shortened and sparse microvilli<sup>9</sup> and histochemical analysis<sup>12</sup> reveals a decrease in enzyme activity in the superficial epithelium in sprue for all enzymes except alkaline phosphatase. Also the mucus store in each cell is decreased in comparison with the normal. On the basis of the increased mitotic index and the blunting of the villi, it is assumed that the cell loss in sprue is greater than normal.<sup>12,19</sup> These authors postulate that the absorptive defect in sprue is due not only to a decrease in mucosal surface but also to a deficiency in the cytologic and chemical organization of the cell. There does not seem to be any correlation between the clinical status of the patient and severity of the intestinal lesion. In the majority of patients with sprue the histology remains the same in spite of clinical evidence of remission.<sup>17,19</sup>

### Summary

1. The technique of per-oral small bowel biopsy with a modification of the Crosby capsule is described.

2. Histologic findings in the normal and diseased small intestinal mucosa are reviewed.

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# Arizona's History of Surgery

## Part III

by

Audrey D. Stevens



The surgeons of the eighteen hundreds were mighty men operating under fantastic conditions.

### CHAPTER II

Continued

#### Early Territorial Doctors

Dr. Goodfellow did his first perineal prostatectomy in 1891. In 1893 Dr. Whitmore gave the anaesthetic for several such operations and described one operation as follows — "Dr. Goodfellow used the scalpel only to get through skin and perineal muscle. All further dissection up to the gland and its enucleation were done by the index finger. In a remarkably short time the gland was delivered intact. It was just about the size of a chestnut and of normal pink color.(25)

In June, 1892, Dr. Goodfellow operated on a six months pregnant woman from Florence, Arizona. She had a uterine fibroid tumor which was approximately half the size of a person's hand. In the operating room there were five doctors from Tucson plus Dr. M. F. Price of Colton, California and Dr. Scott Helm from Phoenix. So frightened was the patient that she had a note to her husband pinned to her clothing in case of her death. The note was found but they didn't have to use it as she returned to Florence with an uneventful recovery.(26)

Dr. Helm assisted Dr. Goodfellow in at least one other operation as there is a news item in a Phoenix paper dated May 5, 1895 which states that Dr. Scott Helm was called to Tucson to

assist Dr. Goodfellow in a "very serious operation."(27) In July 1895, Dr. Helm went to Prescott to "perform a surgical operation."(28) He had a hospital in Phoenix in 1892(29) and I believe that if Dr. Helm hadn't been thrown by a horse and killed in 1897(30) he would have been, along with Dr. Goodfellow, one of Arizona's most famous surgeons.

There were quite a few newspaper articles covering Dr. Helm's surgical activities. The one I enjoyed the most (1896) concerned a man by the name of John Van Hogan who for several years prospected for John Montgomery in the vicinity of the Lost Dutchman and Doc. Thorne Mines.

While prospecting he was shot from the bushes and thought the gunman was an Indian. He "fell forward over the cliff to the rocks below, the distance being eighteen or twenty feet. His leg was mangled by the ball as it plunged through the knee to the hip. He could feel the ball near the skin, and with the nerve of a true westerner he took his jack knife and tried to cut the bullet out but it was too deep.

His horse was fifty yards away and the poor man dragged himself to the animal — mounted and rode to Joe McHenry's camp, — two miles down the gulch. Here he was cared for and they started with the wounded to Phoenix. Yesterday he nearly froze while riding in, being weak from loss of blood. He was two days on horseback with a mangled limb.

This is the third part of a five-part series by the wife of W. C. Stevens, M.D. of Kearney, Arizona.



He was taken to Sister's Hospital where all that can will be done for the poor man. Dr. Helm was summoned and he has hopes Van Hogan will recover. Only his nerve and will power kept him alive on a horse back ride of seventy miles over mountain roads is hard on a well man, and it must be terrible for a man with a shattered limb." (31)

Another commentary (1895)—"Dr. Scott Helm on Wednesday removed a big tumor, the size of a man's two fists, from back of F. Sorlin's neck. The operation was a successful one and the patient is getting along finely." (32)

In 1894 "Doctor Helm, assisted by Dr. D. M. Purman, yesterday removed a large tumor from the jaw of a little child, the daughter of P. Olea. The incision was necessarily a large one, but the child is doing well and will undoubtedly be little injured in facial appearance by the operation." (33)

The other surgeons in Phoenix were also busy having their surgery publicized. Dr. Scott Helm, Dr. H. A. Hughes and Dr. L. D. Dameron made the news quite frequently. I particularly appreciated the following news item: (1894) "Many will remember reading in the papers a few months ago how one Con Jackson or Con Woalf, had been thrown from the train near Maricopa, thereby sustaining a fracture of the skull. The brain was badly bruised, several spoonfuls being taken from the wound by surgeons Hughes and Dameron. No one, even the sanguine medical attendants believed there was a chance of the man surviving. But today Con Woalf is walking the streets of Phoenix steadily gaining strength and flesh. The wound in his head has nicely healed and not a single faculty seems to be even disturbed. He is evidently a man of superior physique for cure. A cure in such desperate surgery has rarely ever before been known." (34)

Dr. Ancil Martin, first President of the Board of Medical Examiners to issue a license in Arizona (1903) and therefore issued Medical License No. 1, had an article concerning him in the *Arizona Gazette* (1895). "J. G. Martin had his right eye removed by Dr. Ancil Martin Monday night. A few weeks ago he received a small chip of rock in his eye which embedded itself in the pupil and was so small that it could not be detected. The eye became to inflamed, and seeing that in order to save his left eye he would have to have the injured one removed." (35)

Those weren't dull years in any part of the Territory of Arizona. Dr. J. N. McCandless who is credited with being the first practicing physician in Prescott, made the news in the *Weekly Arizona Miner*. (1867) "We saw, at the store of Allen and White, in this town, Wednesday last, several pieces of bone which were recently taken from the leg of a little son of George Jackson, of Walnut Grove, by Dr. McCandless, of this place. The little fellow shot himself accidentally, in the leg with a six-shooter." (36)

A decade before Dr. Handy was the victim of an abdominal gunshot wound Dr. J. A. Taggart, the first physician to practice medicine for any length of time in Yuma (1874) was the receiver of a bullet on the opposite side of the abdomen. This time the argument started over some property in Yuma and ended with an exchange of bullets.

The other man died twenty-four hours later. Dr. Taggart was exonerated and a report of his injuries reads as follows: "The extent and nature of Dr. Taggart's wound have not, at the present writing, been definitely ascertained, except that one ball passed through his right hand, and another entered his left side and was taken out from the fleshy part of the back." (37)

For about three months notations were inserted in the *Sentinel* giving accounts of Doctor's steps toward recovery and in 1888 the following was recorded, "Doctors J. H. Taggart and P. G. Cotter performed a dangerous but successful surgical operation upon Mrs. Ragel, who was suffering from cancer of the breast. The operation was a complete success, and the patient is doing well." (38)

Dr. Leonard Y. Loring was stationed at Fort Yuma and the reporters of the *Arizona Sentinel* (1875) were his staunch and grateful supporters. "A young man had been for two years, afflicted with an ulcer on his leg, and found no relief from the usual medical applications. Last Spring, Dr. Leonard Y. Loring of Fort Yuma, took charge of the case, and taking a piece of well flesh from the arm of the patient, engrafted it in the ulcer on his leg, and in a few days the ulcer was gone and the leg well. The operation only lasted a moment and the young man to whom we allude, who is a compositor in our office, never lost a day or an hour from his case while the healing was progressing. We would have given an account of this case long ago, but



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we thought it best to wait and see if the cure was permanent, and we now can say that it is.”(40)

In the following article I’m not sure if the patient was actually as grateful as the compositor or not. The headline was entitled “AMPUTATED” and reads “On Sunday last, Dr. Loring assisted by Mr. Martin and the hospital steward from the Post, (Fort Yuma) amputated Tom Erophy’s arm just above the elbow. Every effort has been made to save the arm, but it was so completely riddled with shot that it was impossible. He seems now to be past danger, and will probably be entirely recovered in time to stand his trial at the next term of the District Court. His occupation is gone; with one arm it will be hard for him to rob a stage.”(41)

The Tombstone Prospector more often than not had an article on Dr. Goodfellow. While the following surgery was not a success I felt compelled to share this news item with you readers. “The shooting in Bisbee of Bob Clark who was well known in Tombstone, was the topic of conversation yesterday, *The Prospector* learns that the wounded man was still alive when the stage left Bisbee at one o’clock p.m.”

“Dr. Goodfellow, fortunately happened to arrive in camp just before the shooting occurred, and performed a most remarkable operation on the wounded man. He opened his abdomen, took his intestines out and laid them on his chest, took about two quarts of blood from the cavity, he having bled internally, picked out the two bullets in the intestines which had been cut by them, and replaced them, sewed up the skin, and the wounded man was conversing with the doctor a short time afterward.”(42) However the patient lived approximately fourteen hours.(43)

The same technique with the exception of washing out the intestines was used by several doctors seven years later on a case (1896) in Nogales. (You’ll never know how sorry I am that I don’t know the doctors’ names who did the operation.) The patient was a boy by the name of Rufino Manvante who was shot in the abdomen. The bullet entered one side and cut obliquely through the intestines. “The abdomen was cut open, the mangled intestines were taken out and washed and the gaps and holes were sewed up.

The abdominal cavity was washed out, and as nothing else could be done, the intestines were put back and the abdomen was sewed up.” Two months later he was a witness testifying against the person who shot him.(44)

It is my guess that two of the doctors involved in the above operation were Dr. Adolphus H. Noon and Dr. W. F. Chenoweth. When Dr. Noon started his practice in Ora Blanca he was the only physician between Tucson, Arizona and Hermosillo, Sonora Mexico. He started practice in Nogales in 1879 and died at the age of ninety-one (1929).(45)

The *Oasis* (1898) published a bone operation done by Dr. Chenoweth — “Last week the splints and bandages were removed from the arm of young James Green, whose painful injuries were described in the *Oasis*, at the time incurred, and it was found that recovery has been complete as well as remarkable. It will be remembered that the bone just below the shoulder in the left arm of the young man was shattered by a bullet from a military rifle, accidentally discharged as close range. So badly was it shattered that amputation was feared necessary. Thanks to the skillful care and attention of Dr. W. F. Chenoweth, the arm was saved, and is now just as well as ever. The case is considered a triumph in surgery, and Dr. F. W. Chenoweth is in receipt of numerous congratulations from all quarters upon the remarkable success attendant upon his efforts in behalf of his patient.”(46)

## FOOTNOTES

### Chapter II Continued

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*Part IV will appear in Vol. 21, No. 8*



# Carcinoma of the Stomach

by

Alton Ochsner, M.D.

**Doctor Ochsner reviews his personal experience with 342 patients with gastric carcinoma, and discusses the factors contributing to the decreasing incidence of gastric carcinoma in the United States.**



Dr. Ochsner

CARCINOMA of the stomach is a disease which, although known since antiquity, has defied all efforts at cure. Through the ages it has continued relentlessly to take the lives of its victims. Today the prognosis is little better than it was in former years. Several years ago I collected data on series of cases of carcinoma of the stomach from a number of the most reputable medical institutions in the United States. In the collected cases, 50 per cent of the patients had operable lesions and 20 per cent resectable tumors. Seventeen per cent survived gastric resection and only 5 per cent were alive at the end of five years. Clark<sup>1</sup>, who collected the cases of carcinoma of the stomach in Harrison County, Texas, reported a five year survival rate of 0.8 per cent.

The only optimistic note about this dreadful disease is that its incidence is decreasing. There are only two types of cancer in the United States whose incidences are decreasing: carcinoma of the cervix and carcinoma of the stomach. I attribute the decreasing incidence of cervical carcinoma to the fact that women, who are extremely cancer-conscious, have regular periodic physical examinations, which enables detection and correction of pre-cancerous lesions before cancer of the cervix develops.

The incidence of cancer of the stomach is also decreasing in the United States as well as in England, although it is increasing in Japan. The mortality rate from gastric cancer decreased from 18.3 per 100,000 population in 1946 to 12.1 in 1958. I believe the same factor is responsible for the decrease in incidence of cervical cancer, that is, pre-cancerous gastric lesions are being detected and corrected before they have a chance to become malignant.

**F**OR A long time I have believed that all gastric ulcers should be excised in contradistinction to

duodenal ulcers, which should be treated conservatively except when the ulcer is intractable or a surgical complication, such as perforation, obstruction, or massive hemorrhage, is present. There are several reasons why I believe this. First, it is impossible for the clinician, gastroscopist, roentgenologist, surgeon when he opens the abdomen, and even the pathologist when he views the resected stomach to state that the lesion is not malignant. It may even be difficult for him to say that it is not malignant when he examines the lesion microscopically unless serial sections are made.

This can be illustrated by a personal experience at the Tulane University School of Medicine. For twenty years the Department of Pathology used as a classical example of a benign ulcer a certain section. After such long usage many of the slides were broken, and in order to replenish the supply, additional sections were cut from the same block. These were given to the students to examine. One of the students told the professor that his slide looked like cancer. The professor replied, "No, that's an ulcer. Go back and look at it again." But the student was persistent, and finally he asked the professor to look at the slide again. Surely enough, it was cancer! That the Department of Pathology in one of the major universities in the United States used as a classical example of a benign ulcer, carcinoma of the stomach for twenty years is indicative of the great difficulty of making this pathologic diagnosis. It simply means that the original sections were cut from the ulcer, which showed no malignant change, whereas the additional sections were cut from an area containing malignant change.

Many physicians question whether benign ulcer of the stomach ever undergoes malignant change. I am one of those rare persons today who believes that this does happen. As a medical student, I was taught that a chronic cal-

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loused ulcer of the stomach could undergo malignant change. However, most pathologists today believe that all gastric cancer begins as cancer.

**M**OREOVER, it is quite conceivable that an epithelial surface, such as the gastric mucosa, can undergo malignant change and that persistence of an ulcer in the stomach for a long time can become cancerous. We know that this happens elsewhere in the body. In the skin, for example, cancer can develop engrafted in an ulcer in the form of a Marjolin's ulcer.

Finally, the incidence of gastric cancer has definitely decreased during the past ten years. The probable explanation for this decrease is that an increasing number of people, such as I, believe that gastric ulcers should be treated surgically so that more patients with gastric ulcers are having gastric resections and these pre-cancerous lesions are being removed before they become malignant.

Gastric ulcers should be resected for another reason. The results of surgical treatment of gastric ulcer are good. On the other hand, the results of the conservative treatment of gastric ulcer are not good. The reported incidence of recurrence ranges from 25 to 50 per cent, and although the complications, such as perforation and hemorrhage, are not as frequent as in duodenal ulcer, when they do occur, they are much more lethal. The physician who treats a gastric ulcer conservatively assumes a responsibility that is not justified because he cannot know that the lesion is not malignant.

There has been considerable discussion in the past regarding the best way to treat gastric cancer even though it has been recognized for some time that the only treatment is surgical extirpation. There is no agreement, however, regarding whether gastrectomy should be total or partial. Any operation short of total gastrectomy requires definition. I am convinced that in most patients with gastric cancer in the distal half of the stomach, as much can be accomplished by radical subtotal gastrectomy as by total gastrectomy. One must define, however, what is meant by radical total gastrectomy. This term has been used to mean anything from an adequate resection to a biopsy.

**I**N THE REMOVAL of any malignant lesion, it is imperative to excise not only the involved viscus itself but also the lymph drainage to

which malignant cells might extend. The principal sites of involvement in gastric carcinoma are nodes around the celiac plexus, those around the left gastric vessels, the paracardial nodes, the gastrolial nodes, the right gastric nodes, which are along the greater curvature, the subpyloric nodes, and the hepatic and subhepatic nodes. In order to remove the gastrolial nodes, it is obligatory to remove the spleen *en bloc* with the stomach.

A number of years ago Wangenstein and associates<sup>2</sup> emphasized the "second look" operation, which is a valuable procedure, particularly in carcinoma of the colon. In this operation, they noted that a certain number of the patients had residual tumor in the subhepatic nodes. To obviate this, at the original resection the nodes in the hepatic fissure should be carefully dissected.

In addition to these, there are nodes along the superior border of the pancreas and certain nodes extend behind the head of the pancreas. Some surgeons have suggested that in order to perform an adequate operation, not only should the stomach be removed but also the pancreas and duodenum. This is an extremely radical operation, and the surgeon must decide what is practical. In some super-radical operations that are being done, one wonders how the surgeon really knows what to send to the laboratory, the specimen or the patient! To resect the pancreas is not practical but it is safe to resect the nodes along the superior border of the pancreas.

**T**HE OPERATION that we do is what we call radical subtotal resection. We remove the first portion of the duodenum. This is important because although I was taught that carcinoma of the stomach never extended into the duodenum, carcinoma in the region of the pylorus can and does extend beyond the stomach into the duodenum for a few centimeters at least. Therefore, the first portion of the duodenum should be removed. We also remove all the lesser curvature up to the cardia, the gastrohepatic, gastrocolic and greater omenta, and the spleen. The greater curvature up to within about 6 cm. of the cardia is removed. This leaves behind a small pouch about as big as one's thumb. Such a small pouch probably does not serve as an efficient reservoir. However, patients who have been subjected to that procedure have considerably less digestive difficulty postoperatively than those who have had total gastrectomy. The latter



are likely to be digestive cripples. By preserving the small pouch a few of the left vagus fibers remain intact, and I think preservation of these fibers is probably responsible for the fewer symptoms experienced by patients who have had radical subtotal resection.

### Personal Experience

Gastric carcinoma occurs in males more often than in females. In our series of 342 patients with gastric carcinoma, 68 per cent were in males. The average age of the two sexes was about the same — 59 years in women and 60 in men. The greatest incidence was in persons in the seventh decade of life followed by the sixth and then the eighth decade. The two extremes are not exempt, however.

Most of our patients complained of some discomfort. Eighty-one per cent had discomfort or abdominal pain, 59 per cent had nausea, 57 per cent had anorexia, and 18 per cent had dysphagia. Those with dysphagia were the patients with lesions in the cardiac end of the stomach.

**L**OSS OF WEIGHT is an important diagnostic and prognostic factor. Ordinarily, loss of weight in malignant disease is considered as indicating an advanced lesion. This is not particularly true in carcinoma of the stomach. Loss of weight can occur very early in the course of the disease because of severe anorexia. The most prominent manifestation we observed was loss of weight; the average amount of weight lost was 25 lb. in 7 months. Forty-seven per cent of the patients had tenderness, 45 per cent simple vomiting, 41 per cent a palpable mass, 21 per cent retention vomiting, 20 per cent melena, and 17 per cent palpable spread, i.e., to the cul-de-sac of Douglas or supraclavicular lymph nodes. The average duration of symptoms was 8 months, which is much too long.

The lesion was described by the pathologist as diffuse in 66 per cent of our series, ulcerative in 23 per cent, and polypoid in 11 per cent. Of our patients 88 per cent had operable lesions; 80 per cent had abdominal exploration; 7.6 per cent refused to submit to operation or were operated on elsewhere; 40 per cent had non-resectable tumors; about the same percentage had resections, and 12.2 per cent had inoperable tumors.

The type of resection that was done varied; 66 per cent had distal subtotal resection and 21

per cent total resection. Total gastrectomy was done if the lesion was in the proximal half of the stomach or if there was diffuse involvement, such as linitis plastica. However, we have never cured a patient with linitis plastica. Thirteen per cent had proximal subtotal resection.

The operative mortality rate varied according to the type of operation. In the distal subtotal resections, it was 7.7 per cent; in the total gastrectomies, 10.3 per cent, and in the proximal subtotal, 27.7 per cent.

**W**E HAVE five year follow-up data on 98 per cent of our patients. None of those with non-resection lesions survived five years. The five year survival rate for the entire series was 10 per cent and the ten year survival rate 7.5 per cent. The five year survival rate was 13 per cent among those who had palliative resection. Palliative resection is an arbitrary clinical designation in which there is gross extension beyond the stomach, to the regional lymph nodes, to the liver by direct continuity, and/or to the transverse mesocolon or transverse colon. Not all of these are actually palliative because 13 per cent are well at the end of five years. The five-year survival rate of all those who had resection was 26 per cent and of those with lesions grossly limited to the stomach, 58 per cent. In a small group in which the preoperative diagnosis was benign ulcer but which later proved to be malignant disease, the five year survival rate was 85 per cent. In 74 per cent of our patients the lesion had grossly extended beyond the stomach and in 26 per cent it was grossly limited to the stomach (palliative).

In the determination of survival statistics in cancer one should include every patient who dies, whether death was due to the operation, recurrence of the disease, an automobile accident, or cardiac disease. The five year survival rate for total resection in our series was 15 per cent and for radical subtotal resection 34 per cent. This definitely shows that radical subtotal resection is a justifiable procedure.

The five year survival rate in those with diffuse involvement was only 2 per cent, in those with polypoid lesions, 20 per cent, and in those with ulcerative lesions, 27 per cent. In most reports, the best prognosis is in polypoid lesions. I think the reason the best results in our cases were in the ulcerative lesions was because in some we could not differentiate them from be-



## Original Articles

nign lesions. No patient with a nonresectable lesion lived as long as three years.

From our study, it appeared that several factors influence prognosis. One important factor was sex. In both carcinoma of the stomach and carcinoma of the lung, although the lesion occurs less frequently in women, the prognosis is better in women. The five-year survival rate in this series in males was 8.8 per cent and in females 13 per cent.

**A**GE APPARENTLY has no influence on prognosis. Forty per cent of our patients were older than 60 years, whereas only 33 per cent of those younger than this had resectable lesions, but the five-year survival rates were exactly the same for the two groups, 10 per cent.

The duration of symptoms influenced prognosis. The resectability incidence was 38 per cent in those who had symptoms less than 9 month and 44 per cent in those who had symptoms more than 9 months. The five-year survival rate was 7 per cent in those who had symptoms less than 9 month and 16 per cent in those who had symptoms more than 9 months. This appears paradoxical because it suggests that the longer the delay in treatment the better the prognosis. This, of course, is not true. These statistics indicate one of two things: One is that patients who have symptoms for a long time have a slower growing and a more benign type of lesion. Therefore, although the symptoms lasted longer, the prognosis was better. The other reason, which I think is equally, if not more important, is that probably in some of them the original symptoms were those of an ulcer, not those of cancer. The lesion, which initially was benign, subsequently became malignant, and the longer history was caused by both the pre-existing benign lesion and the subsequent malignant one. The important conclusion that can be drawn from these statistics is that a long history of gastric symptoms does not necessarily offer a poor prognosis. This same holds true in patients with cancer of the lung. Our resectability and curability incidences were higher in patients who had the longer history.

Loss of weight also is of prognostic importance. The five year survival rate in our patients who had lost less than 15 lb. in weight was 15 per cent as contrasted with 10 per cent in those who had lost more than 25 lb. in weight.

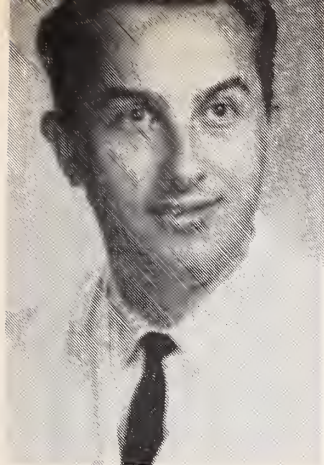
**T**HE RESULTS of the treatment of gastric cancer can be improved only by treating the

disease before the diagnosis is made. That is a paradox. How can one treat something that cannot be diagnosed? What I mean is if one waits until the lesion is clinically diagnosable as cancer of the stomach, it is too late. When a clinical diagnosis of cancer of the stomach is made, the disease is in the terminal stage. It is not difficult for a medical student to make a diagnosis of varcinoma of the stomach on the ward. Anyone can make such a diagnosis. In order to improve the results in gastric cancer one must treat lesions that are not clinically cancer. These are ulcers of the stomach and gastric polyps, which are premalignant. One must be particularly suspicious of people with pernicious anemia and atrophic gastritis, because the incidence of carcinoma of the stomach in such individuals is fifteen times higher than it is in the general population as a whole. Finally, it is occasionally necessary to perform abdominal exploration because of symptoms alone. This represents a small but important group. We have seen 6 patients, all men older than 40 years of age who previously could eat anything, in whom anorexia developed severe enough to make them lose 15 or more pounds in weight. All were carefully examined. Gastric cancer was suspected but results of gastric roentgenography, gastric cytology, and gastroscopy were negative, and 4 of the six had normal gastric acidity. Our gastrologist insisted they had cancer of the stomach. All had abdominal exploration and all 6 had small malignant tumors of the stomach. Gastric resection was done, and I believe they are well. During this same period of about five or six years, we had 10 additional patients with the same history who were originally seen by good physicians and examined by good roentgenologists and gastroscopists. Because nothing was found, they were reassured that there was nothing wrong. We saw them after varying periods of time — I think four to ten months later, at which time one could make a diagnosis of carcinoma of the stomach without any difficulty whatsoever. All 10 of these were operated on and found to have inoperable lesions. Whether all 10 would have had resectable tumors at onset of symptoms is not known, but I believe they would have.

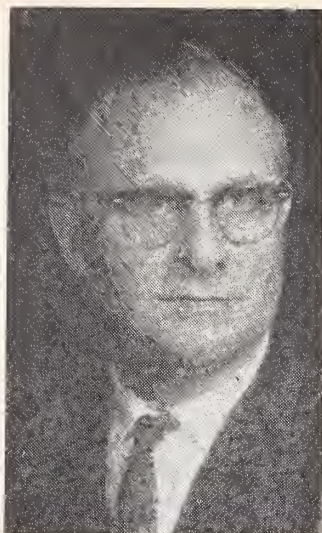
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Dr. Kanjuh



Dr. Edwards

## Original Articles

# Pathologic Aspects of Chronic Pulmonary Hypertension

## Part II

by

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and

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**An understanding of the pathological aspects of pulmonary hypertension is essential to a physiologic basis of therapy.**

## Conclusion

### Medial Hypertrophy

Before considering the role of medial hypertrophy as a structural change underlying or associated with pulmonary hypertension, certain general observations need to be made.

It is established that in the fetus the smallest arterial vessels have a different appearance than do similar vessels in the adult.<sup>38-40</sup> In the fetus, characteristically, the media is thick and the lumen is narrow. After birth there is a gradual approach toward the adult stage as the media of the muscular arteries and arterioles become thinner and the lumina widens. Usually by the sixth postnatal week adult features of thickness of media and width of lumen are reached. From histologic appearances it seems likely that in the stage when the media is thick the small pulmonary arterial vessel is capable of offering significant obstruction to blood flow. A vessel with a thick medial layer is able to exercise

greater degrees of vasoconstriction than a vessel with a thin media. In addition, the vessel with a thick media offers greater resistance to distention by the pulse wave than does the thinner vessel. It is apparent that for the same stimulus toward pulmonary vasoconstriction the response will depend upon the capabilities of the pulmonary vessels.

If the vascular bed still shows fetal characteristics or if medial hypertrophy becomes acquired after a phase of normal evolution to the adult stage, the responsiveness to a given stimulus for vasoconstriction will be greater than when the pulmonary vessels are of a normal adult character.

It is to be recognized that in the normal adult the pulmonary vascular bed is so weakly responsive that whatever stimulus is applied changes in pulmonary pressure are often not measurable. Judging from disease states, however, it is apparent that the normal adult pulmonary vascular bed can respond and over a long period of stimulation the once thin muscular arteries and arterioles may acquire thick medial layers. At this stage demonstration of elevated pulmonary vascular resistance and its element of vasoconstriction are possible.

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With this background we may now turn to certain states in which pulmonary hypertension in the absence of excess pulmonary blood flow is associated primarily with medial hypertrophy of the pulmonary arterioles and muscular arteries.

### High Altitude

Residence of both man and certain cattle at high altitude from birth as well as some experimental animals is known to be associated with higher pulmonary arterial pressures than that which occurs in corresponding populations living at lower altitudes.<sup>41-49</sup> The pulmonary blood flow is at normal levels; therefore, the vascular resistance is elevated. Structurally, the muscular arteries and arterioles of the lung are thicker than in control subjects living at lower altitudes.<sup>50</sup> It is presumed that in subjects born and living at high altitudes there is failure of normal evolution of the pulmonary vessels into the usual postnatal state. The stimulus is probably inspiration of air relatively low in oxygen tension. The mechanism through which this stimulus acts to achieve vasoconstriction is not known, however.

### Obesity

Obesity may be associated with elevated pulmonary arterial pressure, a feature of so-called Pickwickian syndrome.<sup>51-52</sup> In such subjects the small pulmonary vessels exhibit medial hypertrophy as the only significant structural change.

It is presumed that the obese state causes a deficiency in respiratory function and as a result the pulmonary capillaries are subjected to gaseous mixtures relatively low in oxygen tension.

In subjects born and living at high altitude the medial hypertrophy may be considered a retention of fetal structural characteristics. In the obese subject one must assume that the medial hypertrophy of the small pulmonary arterial vessels is an acquired state. Such cases offer evidence for the concept that normal pulmonary vessels may acquire medial hypertrophy as a result of long range exposure to the stimulus of low oxygen tension of the alveolar gas.

### Kyphoscoliosis

The troublesome problem of kyphoscoliosis has long been recognized as being associated with right ventricular hypertrophy. This is an anatomic sign of pulmonary hypertension. Several explanations have been given for the elevated pulmonary pressure, including atelectasis in some portion of the pulmonary system and



Fig. 11.  
Pulmonary fibrosis. Gross specimen of lung sectioned. The pale areas represent dense scar tissue.

emphysema in the remainder. Necropsy experience with this problem frequently is impressive concerning the minimal degrees of these two lesions that are present. Perhaps it is valid to explain the increased pulmonary vascular resistance on the same basis as in the pulmonary hypertension of obesity; namely, that in the kyphoscoliotic subject there is a low oxygen tension of the alveolar gas. In this instance this would be an expression of the impaired respiratory function incident to the skeletal disease.

### Neuromuscular Disease

Inadequate ventilation resulting either from disease of the central nervous system or of the skeletal muscles leads to hypoxic vasoconstriction of the pulmonary arterial vessels.<sup>53-55</sup> The fundamental process is functionally similar to that observed in obesity.



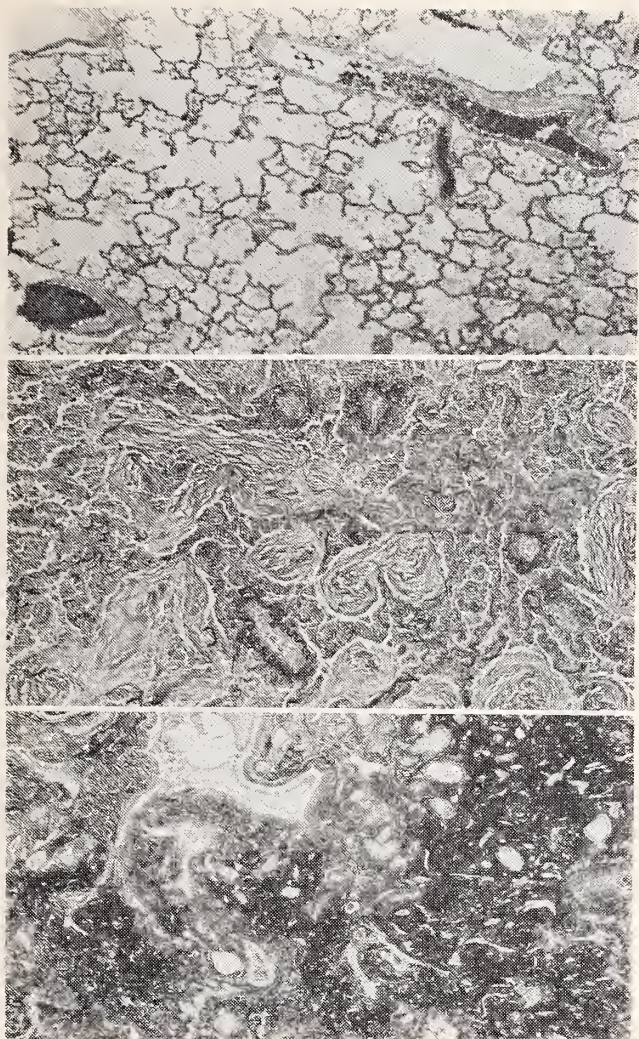


Fig. 12.

Photomicrographs of pulmonary fibrosis compared with the normal lung. UPPER. Normal lung showing the characteristically wide air spaces supporting thin capillary channels. The arterial vessels present in this field show the characteristically wide lumens and thin walls, which are normal features. H & E; X 32. CENTER. Extensive organization of pneumonia. The alveolar spaces contain nodules of fibrous tissue considered to have resulted from organization of fibrin from an earlier stage of active pneumonia. Associated with these nodules are thickening of the alveolar walls and intimal thickening of the blood vessels. Elastic tissue stain; x 93. LOWER. Extensive pulmonary fibrosis of undetermined etiology. The pulmonary tissue in this area is composed predominantly of collagen and elastic tissue. The striking difference in structure of the lung in this area with the normal is evident. Elastic tissue stain; X 32.

### Pulmonary Parenchymal Disease

Pulmonary parenchymal disease which is associated with pulmonary hypertension usually takes the form either of pulmonary fibrosis (Fig. 11), regardless of the varied etiologies, and/or emphysema.<sup>56-59</sup> Occlusive vascular lesions may be observed, particularly in pulmonary fibrosis. Such lesions undoubtedly contribute to increased pulmonary vascular resistance. The main factor causing elevated resistance, however,

appears to reside in the general alteration in the structure of the lung. In considering the role of parenchymal disease in the problem with which we are here concerned, it is well to recall that vascular resistance is an expression indicative of the capacity of the vascular bed. Thus it may be said that the normal pulmonary vascular bed with its low resistance to flow is a large vascular bed. Contrariwise, the vascular bed offering high levels of resistance to flow has a small capacity. In pulmonary fibrosis the scarred areas containing compressed capillaries encased in dense unyielding fibrous tissue bear no resemblance to the delicate structure of the lung, a structure characterized by numerous capillaries which are readily distensible as they lie supported by hardly more than a collection of air at atmospheric pressure. The scarred area of the lung from the points of view of respiratory and vascular functions may be viewed as non-existent pulmonary tissue (Fig. 12). The areas scarred may be considered as comparable to having been removed. This leaves only a portion of the original pulmonary vascular bed to function as such. As areas of pulmonary tissue are lost, the capacity of the entire pulmonary vascular bed becomes smaller; that is, the resistance rises and with it so rises the pulmonary arterial pressure.

The fundamental cause of increased pulmonary vascular resistance which applies to pulmonary fibrosis seems also to apply to *pulmonary emphysema* (Fig. 13). Areas of bullous emphysema represent areas of loss of pulmonary tissue, including its blood supply. As this process becomes extensive the functioning part of the pulmonary vascular bed is significantly reduced (Fig. 14).

While the fundamental problem in pulmonary fibrosis and in emphysema appears to be loss of segments of the normal pulmonary vascular bed, other factors may play additional roles. In emphysematous areas, whether as part of a primary condition or secondary to pulmonary fibrosis, trapping of air raises the intra-alveolar pressure. This may compress capillaries and raise the barrier to pulmonary blood flow.

An additional factor is the medial hypertrophy that may appear in the small pulmonary arterial vessels. This change may result from elevated pressure caused by other factors and it may result from hypoxia. Once established, the secondary medial hypertrophy may contribute to ele-



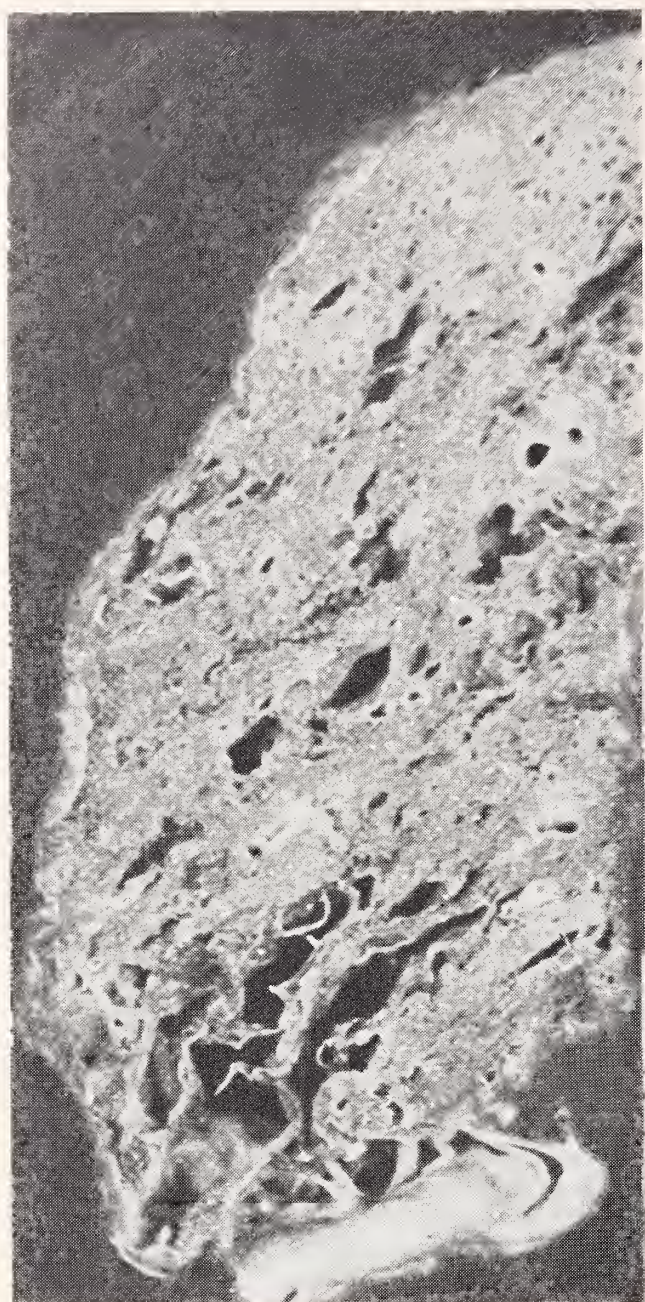


Fig. 13.

Gross specimen of a portion of lung with emphysema.

vation of pulmonary vascular resistance through vasoconstriction and through the passive resistance to flow that is offered by a thick muscular collar within the affected vessels.

### Pulmonary Venous Obstruction

A large variety of conditions, both congenital and acquired,<sup>60-61</sup> are responsible for pulmonary venous obstruction and associated pulmonary arterial hypertension. Congenital causes include certain forms of anomalous pulmonary venous connection or stenosis, left ventricular endocardial sclerosis and congenital varieties of mitral stenosis or insufficiency.<sup>62</sup>

The classical form of acquired pulmonary venous obstruction is rheumatic mitral stenosis.<sup>63-65</sup> Also included among the acquired varieties are several types of mitral insufficiency and chronic left ventricular failure from whatever cause.

As a consequence of the fundamental problem of pulmonary venous obstruction there is elevation of the pulmonary venous and capillary pressures and of the arterial pressures.<sup>69-71</sup> The elevation of arterial pressure is not a simple reflection of elevated capillary pressure as this rises to disproportionately higher levels than either the capillary or venous pressures. This phenomenon must be interpreted as a manifestation of a zone of increased resistance at pulmonary "arteriolar" level. This phenomenon may simply be a manifestation of vasoconstriction at the levels of the pulmonary arterioles and small arteries. Since the process of pulmonary venous obstruction is usually a chronic one there is a gradual increase in thickness of the medial layer of the pulmonary muscular arteries (Fig. 15, *Upper left*) and of the proximal segments of the arterioles that are normally supplied with a muscular medial layer. Moreover, muscle may grow peripherally into those parts of the arterioles that normally do not contain a definite medial layer. When the stage is reached in which there is a substantially greater amount of medial

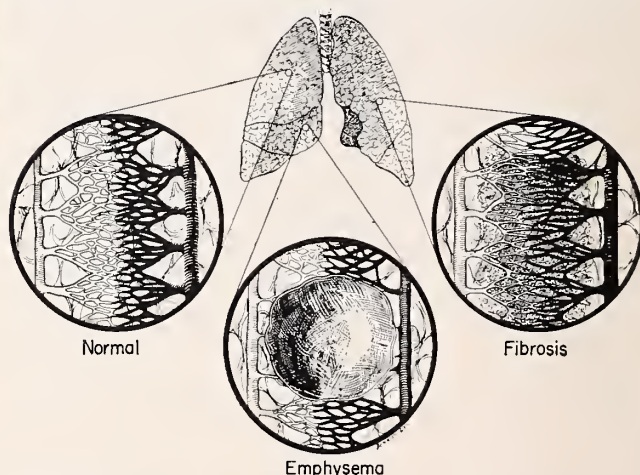


Fig. 14.

Diagrammatic comparison of the pulmonary vascular bed in the normal with that in emphysema and in pulmonary fibrosis. The normal pulmonary vascular bed, represents a low resistance — high reserve type of vascular bed, with wide channels offering little obstruction to pulmonary flow. In emphysema, one factor is loss of pulmonary tissue. Other factors may include hypoxia, which, in turn, would be met with pulmonary vasoconstriction. In pulmonary fibrosis, the structure of the lung is materially different from that in the normal. One difference is the fact that the pulmonary capillary network is not supported by air spaces but instead by dense, constricting fibrous tissue.



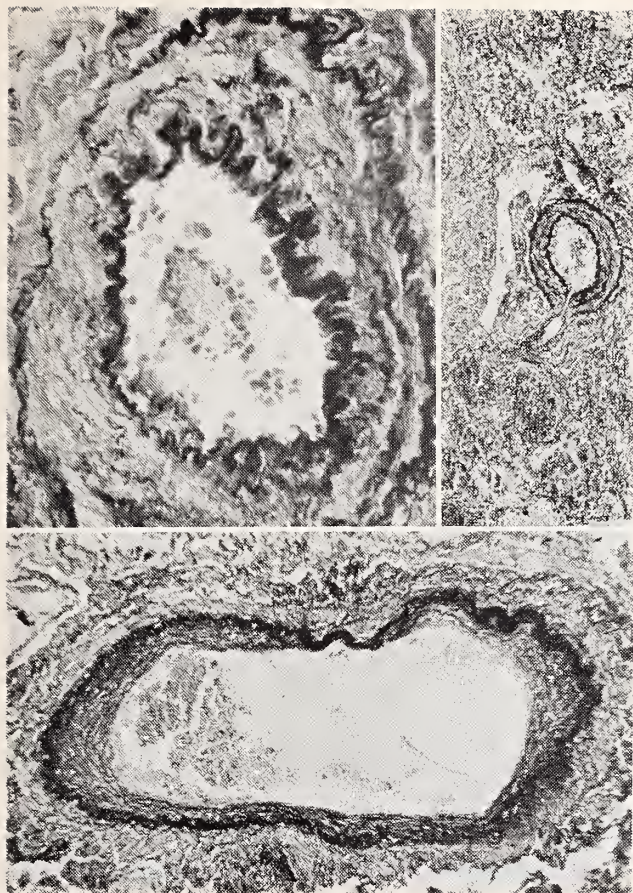


Fig. 15.

Blood vessels in pulmonary venous obstruction. UPPER LEFT. A muscular pulmonary artery in a patient with mitral stenosis. Marked medial hypertrophy. Elastic tissue stain; X 400. UPPER RIGHT. A muscular artery and one of its branches from a case of chronic left ventricular failure resulting from chronic myocarditis. In addition to medial hypertrophy of the parent vessel, there is a zone of narrowing at the ostium of the branch. It is conceivable that the latter site represents an important obstructive focal point in vasoconstriction. The structure of the wall at the narrow ostium may be viewed as a sphincter at the beginning of the branch. Elastic tissue stain; X 110. LOWER. A pulmonary vein from a patient with mitral stenosis. There is medial hypertrophy, prominence of the elastic layers, and non-specific fibrous thickening of the intima. Elastic tissue stain; X 56.

arterial muscle than normal, vasoconstriction of high degree may be exhibited at precapillary levels.<sup>72</sup> Also, as in other situations, the thick medial layers of the arterial vessels may offer an element of passive resistance to blood flow. The zone of high resistance at "arteriolar" level which characterizes chronic pulmonary venous obstruction has been suggested as a phenomenon preventing pulmonary edema.<sup>73</sup> It will be recalled that the elevated capillary pressure incident to pulmonary venous obstruction favors the occurrence of pulmonary edema. Yet episodes of pulmonary edema are relatively uncommon. This has been explained by the protective function of the small arterial vessels which regulate the

amount of flow into the capillary level to be of such volume as to yield pressures below levels which would cause pulmonary edema (Fig. 15, *Upper right*). If this concept is correct when episodes of pulmonary edema do occur in chronic pulmonary venous obstruction they may be viewed as manifestations of pulmonary "arteriolar" failure.

Structurally, in chronic pulmonary venous obstruction certain changes may be present in addition to the medial hypertrophy of arterial vessels.<sup>74-75</sup> These include non-specific intimal fibrous thickening of the arteries, arterioles, venules, and veins (Fig. 15, *Lower*). Medial thickening of pulmonary veins occurs and the visceral pleural and intrapulmonary lymphatics are dilated (Fig. 16, *Lower*). Parenchymal changes may also appear. These include hemosiderosis (Fig. 16, *Upper left*), fibrous thickening of the alveolar walls, the appearance of cuboidal cells at the alveolar lining, the rare formation of bony spicules within alveolar spaces (Fig. 16, *Upper right*).

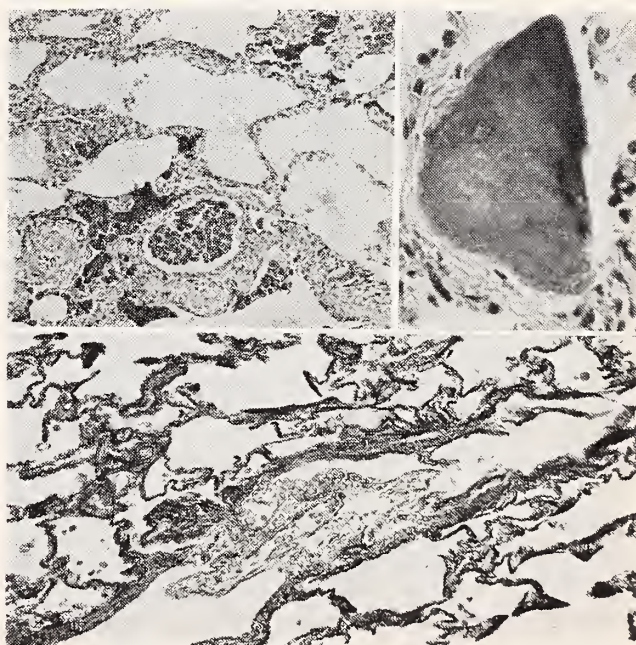


Fig. 16.

Photomicrographs of pulmonary tissue from cases of mitral stenosis. UPPER LEFT. Accumulations of pigment-laden macrophages within the alveolar spaces and in the septa represent hemosiderosis of the lung, a common change in chronic pulmonary venous obstruction. H & E; X 95. UPPER RIGHT. Within an alveolar space is a spicule of bone. This picture is only occasionally seen in patients with mitral stenosis. H & E; X 400. LOWER. Running obliquely through the center of the illustration is a wide space representing a dilated interlobular lymphatic of the lung. This change is commonly seen in mitral stenosis and may contribute to the formation of the horizontal lines seen roentgenographically in the periphery of the lungs in some cases of chronic pulmonary venous obstruction. Elastic tissue stain; X 75.



It is significant that in chronic pulmonary venous obstruction the severe degree of vascular changes seen in late stages of congenital cardiac septal defects do not ordinarily occur. For example, we have not observed the plexiform lesion in examples of chronic pulmonary venous obstruction, even when the fundamental process has been of severe degree and has persisted for a considerable period of time.

In the period when surgery for mitral stenosis was contemplated, the structural changes in the pulmonary vascular bed were considered a potential source of persistent hypertension even though the mitral stenosis might be corrected. Experience, however, has shown that this potential problem has not become a practical one. Persistent pulmonary hypertension after an operation for mitral stenosis usually means that the mitral valve is still significantly stenotic.

## Summary

Pulmonary hypertension is usually a secondary condition in which either the pulmonary vascular resistance is elevated or in which elevation of pulmonary vascular resistance is associated with increased pulmonary blood flow.

When the pulmonary blood flow is increased a septal defect is characteristically present.

When the pulmonary blood flow is not increased the fundamental change may be found in obstruction to the lumens of pulmonary vessels, in intimal disease or in medial response. Disease of the pulmonary parenchyma or obstruction to pulmonary venous flow are other phenomena which may underlie pulmonary hypertension.

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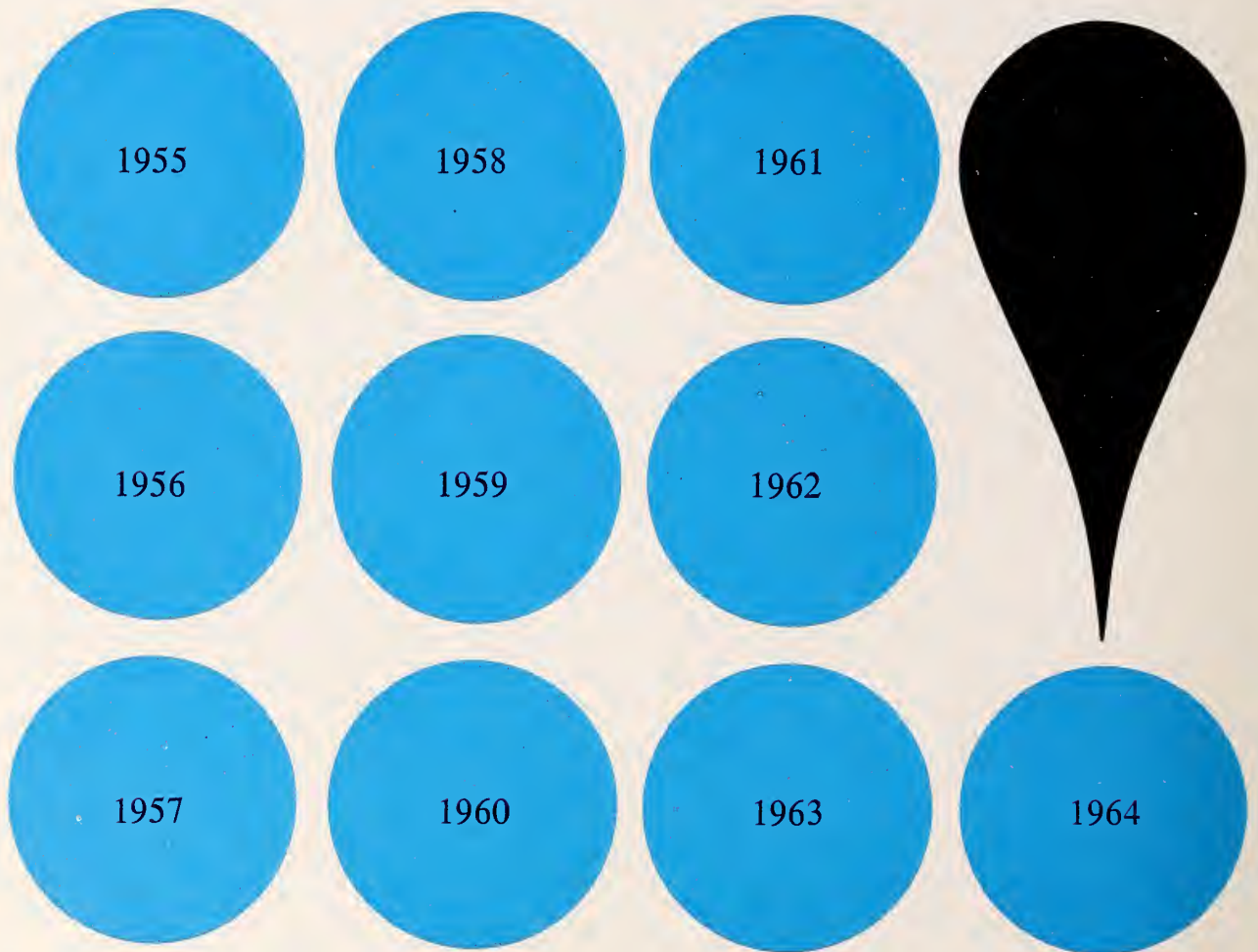


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for relaxing stress-induced  
smooth muscle spasm**



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Under the pressure of modern living, with its “small continued anxieties of life,”<sup>6</sup> functional disturbances of secretion, tone and motility of the gastrointestinal tract are extremely common.<sup>6,8</sup> For the relief of symptoms associated with such disturbances—through rest for the patient, rest for the colon<sup>3</sup>—the drugs of greatest value have proved to be the antispasmodics and the sedatives.<sup>3,6,7</sup>

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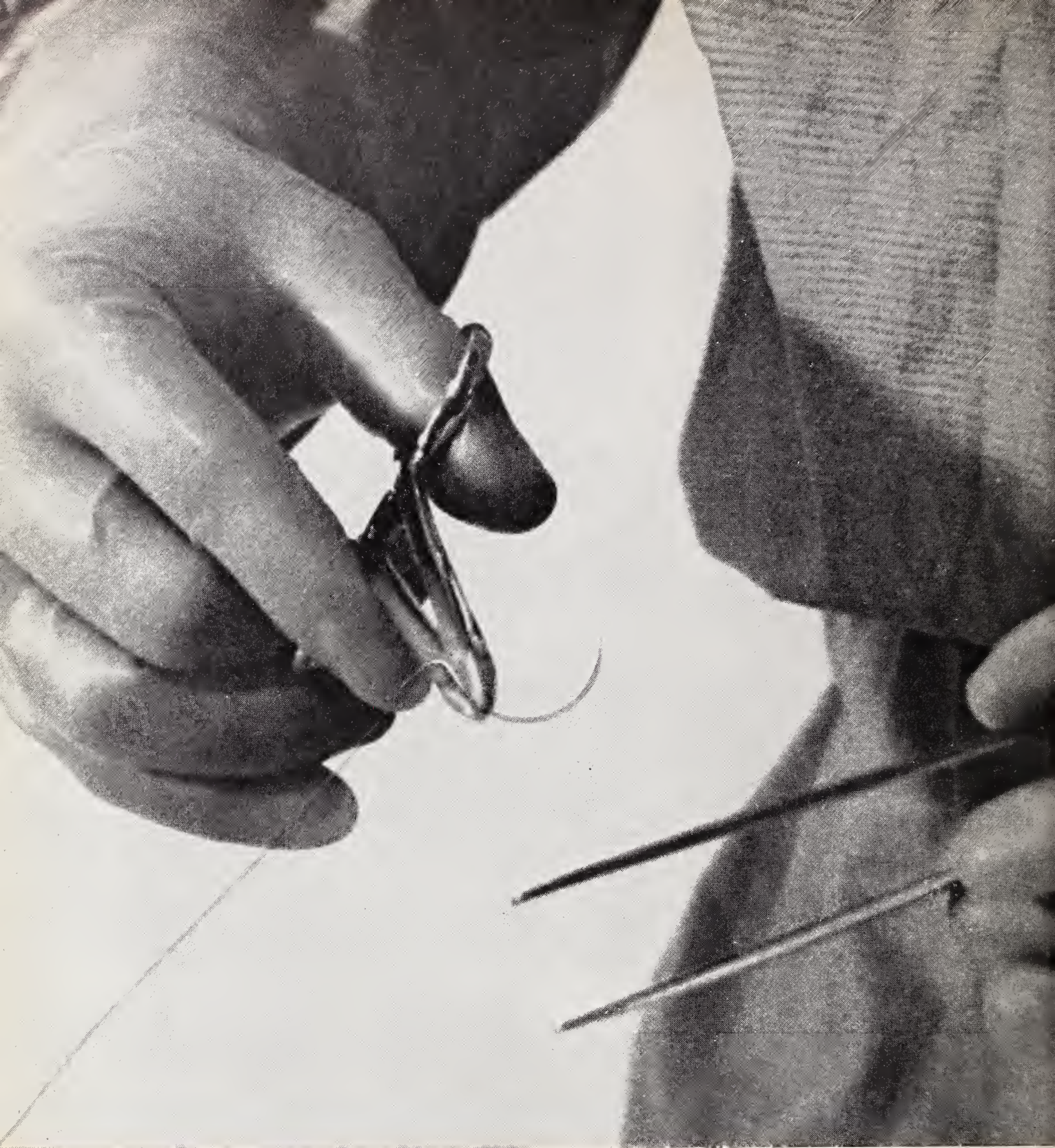
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\*This one at Olympic National Park, Washington.





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Dr. Brewer

Memorial Day, 1964 will have come and gone by the time this is set to type, but in anticipation of it now on May Day I cannot but take special cognizance of the efforts of all medical military personnel, who have died, and lived and worked, that all persons might survive the horrors of war; that those injured

might regain normal bodies and minds, expeditiously and with a minimum of suffering.

We in the world fraternity of medicine take great pride in these noble efforts and are happy that their efforts have spilled over into civilian medicine for the benefit of all in times of peace. And we in American medicine can fervently add our, "may they not have died in vain," coupled with our determination to defend our bastion — the last bastion — of freedom, in these times of attack from many quarters; for we would preserve it as it came to life out of the cauldron of our Revolutionary War, hammered into form by the immortal Declaration of Independence, and dedicated to the Freedom of Man and to his dignity as man among men. A forethought for the next month and the Fourth of July!

Thinking of the world fraternity of medicine, we note that the World Medical Association is meeting in Helsinki, Finland this month, June 14 to 19. The meeting will be its eighteenth and will be saddened by the death in February this year of Dr. Louis Bauer, who did so much in founding this organization and who was given a special citation for his work only last year.

Our Edward R. Annis, M.D. is president of that organization. Lyndon B. Johnson, then vice-president of the United States, spoke before his inauguration, quoting Cicero, "In nothing do men more nearly approach the gods than in giving health to men." He stressed the fact that the United States is not isolated by oceans from the rest of the world and urged that cooperation on an international scale is the only way to deal with modern health problems.

I note that fifty-seven nations belong to the

World Medical Association, including Yugoslavia, but not Russia or her other satellites, except Cuba. While the United States has been a member since its inception, there has been too little interest in it by its physicians, chiefly, I think, because of lack of knowledge of its purpose and accomplishments.

The World Medical Association is the only world-wide non-governmental association dedicated to protecting and promoting the freedoms essential to the most effective practice of medicine; to raising the standards of medical education and health throughout the world; to bringing together physicians from all over the globe for the sharing of knowledge and ideas; to providing a world forum for discussion and solution of problems common to medicine the world over; and to speaking for the physician before other world organizations concerned with health or medical care.

This organization has concerned itself with many things interesting and important to physicians in the United States and the world, such as post-graduate education, hospital facilities, cult practices, new drugs, medical advertising. At the last assembly, papers were given on space medicine, cancer, asthma and cardiovascular disorders.

But I believe the doctors of Arizona would be most interested in the "Principles of Social Security" which were adopted in 1963, keeping in mind the diversity of national political systems involved, from the completest freedom, as in the United States, to those in which the medical services are organized entirely by the State.

I. The conditions of medical practice in any social security scheme shall be determined in consultation with the representatives of the professional organizations.

II. Any social security scheme should allow the patient to consult the doctor of his choice, and the doctor to treat only patients of his choice, without the rights of either being affected in any way. The principle of free choice should be applied also in cases where medical treatment or a part of it is provided in treatment centers.

III. Any system of social security should be open to all licensed doctors; neither the medical profession nor the individual doctor should be forced to take part if they do not so wish.



## President's Page

IV. The doctor should be free to practice his profession where he wishes and also to limit his practice to a given specialty in which he is qualified. The medical needs of the country concerned should be satisfied and the profession, wherever possible, should seek to orient young doctors toward the areas where they are most needed. In cases where these areas are less favorable than others, doctors who go there should be aided so that their equipment is satisfactory and their standard of living is in accordance with their professional responsibilities.

V. The profession should be adequately represented on all official bodies dealing with problems concerning health or disease.

VI. Professional secrecy must be observed by all those who collaborate at any stage of the patient's treatment or in the control thereof. This should be duly respected by authority.

VII. The moral, economic and professional independence of the doctor should be guaranteed.

VIII. When the remuneration of medical services is not fixed by direct agreement between doctor and patient, proper consideration should be taken of the great responsibility involved in the practice of medicine.

IX. The remuneration of medical services should take into consideration the services rendered and should not entirely be fixed according to the financial status of the paying authority or as a result of unilateral government decisions, and should be acceptable to the agency which represents the medical profession.

X. Control in medical matters should be carried out by doctors only.

XI. In the higher interest of the patient there should be no restriction of the doctor's right to prescribe drugs or any other treatment deemed necessary.

XII. The doctor should have the opportunity of participating in any activity directed toward improving his knowledge and status in his professional life.

The impact of these is obvious. Any organization which has the capacity to wrestle with such massive problems in these days should have our support. As a matter of fact, the American Medical Association has urged every American physician to become a member of the World Medical Association by resolution of its House of Delegates. And I hope that a greater number of Arizona physicians will do just that.

W. Albert Brewer, M.D.  
*President*

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## PTA and PILLS

In its 1963-64 legislative program the National Congress of PTA has urged support of "expanded public health services for all children and youth." It further states "the National Congress will support legislation to strengthen the Food and Drug Administration to inspect food, drug and cosmetic establishments, and to ensure the purity and safety of their products."

Commendable as these objectives sound we would suggest that emphasis might better be placed on improving the public health service where specific needs exist, rather than expanding services for "all" children. Further, since the private medical practitioners of this country have so ably cared for our children over the years, it might be well for the PTA to also adopt a resolution supporting the private physicians of the country in their attempts to block the politically inspired federal legislative plans to socialize these doctors. Federal medicine is not the road to better medicine for our children.

We would further remind the PTA that it is not the Food and Drug Administration that has developed the means to investigate, develop and

market the most astounding array of disease-preventing vaccines and miraculous pharmaceuticals imaginable. Rather, it is the drug industry of this country which is being rewarded for its efforts by regulatory restrictions so extreme as to already discourage some areas of medical research.

Let the law deal harshly with any dishonesty, false claims, or unsafe practices found in the drug industry, but let us not encourage unlimited power by the FDA which could destroy the tree laden with the fruit of honest research because of one ailing branch.

We would suggest that the PTA offer a resolution of confidence in the pharmaceutical industry whose products have saved the lives of so many children. It is easy to forget that the life of President Lincoln's son could probably have been saved by antibiotics easily obtainable by today's PTA members.

Robert F. Lorenzen, M.D.  
Editor

*Ed. note — for further comments on the drug industry, see page 421.*

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Material submitted for publication in ARIZONA MEDICINE should conform to the following policies:

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3. Although the Editors try to catch inaccuracies, the ultimate responsibility is the author's.

4. Articles are accepted for publication only if they are contributed exclusively to this Journal. Ordinarily, contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

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JOHANNES VERMEER  
1632-1675



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# What Drugs, What Charms

by

A. Ian Richardson, M.D.

A month ago one of my patients had erysipelas. This is a rarity nowadays. How great a one can be judged by the fact that the last one seen in our group practice was more than ten years ago, and in the meantime consultations have averaged 25,000 per year. But something else occurred which, if not quite so rare, was certainly noteworthy. The patient, a woman of 60, came down to the surgery afterwards to thank me for her prompt recovery, and she added she had said a prayer for Sir Andrew Fleming! I was a bit troubled about this afterwards as I think she had got the Christian name of the discoverer of penicillin wrong. However, a colleague assured me that the Department of Lost Prayers would be capable of dealing with that one.

To hear a word of appreciation for any of the products or work of the drug industry is rare nowadays. It must be thoroughly discouraging to anyone working in the industry to have to listen to the constant vilification that has made the word "drug" sound like a dirty word. For prominence seems only to be given in the press to the shortcomings of the industry. The Auditor-General has only to report that some fatheads on the hospital boards have paid five times as much for a particular drug as their colleagues elsewhere, and it is a national scandal. But what about the vast amount of restless, probing, and expensive research that is constantly producing new weapons against disease? This hardly gets a mention.

Speaking as a general practitioner, and one who so far (*touch wood — male omen absit*) has never needed as much as an aspirin, I am profoundly grateful for the varied and constantly improved weapons put in my hand.

Contrary to what many of my hospital colleagues seem to think, I do not need refresher courses in which some academic bore with a piece of chalk and a blackboard takes an hour to

cover a subject I can read up in 10 minutes at home. At all times I am in contact with reality in disease. I live among my patients, know their problems and way of life. My children grow up with theirs, play with them, and exchange their childhood diseases.

Any failures or omissions in my therapeutics are quickly manifest. If my nearest colleague is wiping the impetigo off Wee Willie's smug face quicker than I am doing for his cousin, then I am soon made aware of it. There is, unfortunately, no ward sister interposed to tell the parents that Donald is dead and would they collect his body from the hospital mortuary. I have to communicate tragic news myself, and to be prepared to deal with the consequences thereof unflinchingly. If an extra spur is needed to make me give of my best to the sick, it is simply that, in the fullness of time, I can see myself in their place.

Some advances in treatment have been miraculous. Take for example the treatment of high blood pressure. It is only a few years since there was virtually no treatment at all, apart from general sedation. Then drugs such as the ganglion blocking agents were discovered which could, in some cases, control the blood pressure adequately. But unfortunately the side-effects were troublesome, and patients often preferred to tolerate the disease rather than the depression, visual disturbances, and impotence that went along with the treatment. Gradually these side-effects were eliminated by alteration of formulae, and recently newer drugs have achieved spectacular results.

General practitioners are used to drug firms claiming minor miracles for their products. Because of experience, we have become sceptics, and are often by the next visit able to cut the claims and the claimant down to size. But I am thinking of one new drug in particular for high blood pressure that has done all and more than was claimed for it. Gradually, as they reported

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From the March 19, 1964 issue of the *Manchester Guardian Weekly*, England.



in routinely, most of our hypertensive patients have been transferred to it wherever suitable. So far, at any rate, the control has been fantastically good, even in low dosage, and the patients themselves able to lead normal useful lives. One look at their faces is enough. This particular drug was produced by one of the large American firms so much criticised today. Recently a representative of another such firm told me that his firm believed that they had already actually improved the formulae.

In their search for lower costs for the Health Service, the Government should avoid looking at the problem only through the eyes of their auditors. For there is already a danger that they may start to believe some of the nonsense put out by their spokesmen, and by a supporting clique of sycophantic, medically qualified civil servants. There are evils inherent in the commercialised drug industry, but they are minor ones compared with those of a State-controlled one. The Russians have not produced a single worthwhile new drug since the war.

It is good to see the drug companies aware at last of the need to combat ignorant propaganda. I would like to make a suggestion, gratis, of course. The medieval Church would still show them a trick or two. In a town in Austria, miraculously delivered from the plague, the clergy have organised a yearly procession of thanksgiving since the Middle Ages. What we need is an annual drug thanksgiving day, perhaps just after, and modelled on, the Lord Mayor's Show. You know the sort of thing — garish floats, with hordes of small children in multi-coloured tulle dresses, effigies, pageants the lot. Grateful patients could join in at suitable gaps, thoughtfully provided.

Facetious? Maybe. But there can be little doubt of the need to remind us of what has been achieved for our benefit.

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*The following two articles appeared on the same page of the Phoenix Gazette in April. It looks like a case of the right hand not knowing what the left hand is doing.*

### VA Told To Study Hospitals Closing

WASHINGTON (UPI) — President Johnson has directed the Veterans Administration to consider closing some of its hospitals as an economy step, the White House disclosed today.

White House Press Secretary George E. Reedy said the agency was also told to study the possibility of consolidating some of its other hospitals.

In another economy move, the President has ordered the Atomic Energy Commission to “ride herd” on its contractors, Reedy reported.

REEDY SAID the President had received 13 reports from federal agencies in response to his Dec. 24 request for economies.

He added that Johnson had ordered the Department of Health, Education and Welfare (HEW) the VA and the Federal Aviation Agency to consider further economies.

He did not go into details of the possibility of the VA hospital closings.

THE VA, ALONG with HEW, also was ordered to investigate the possibility of changing its schedule for mailing benefit checks. Reedy said government experts estimated recycling of the benefit mailings could save \$4 million annually.

He said the AEC, in its report to the President, had said a one per cent cut in its payroll was possible by eliminating about 70 people.

Johnson ordered AEC Chairman Glenn Seaborg to investigate the possibility of keeping the 70 employees on the payroll and assigning them to “reviewing and riding herd on contracts.”

REEDY SAID payrolls account for only about 2 per cent of the AEC's budget and the President felt much more could be saved by attacking the other 98 per cent.

He said the FAA was asked to investigate the possibility of consolidating and possibly eliminating some “in flight” service stations. These stations provide pilots with flight information while they are in the air.

### Hospital Expansion Here Urged

Congress likely will be asked to expand more than 2½ times the present 198-bed Phoenix veterans hospital to care for the influx of war-disabled veterans.

William A. Shaud, deputy chief of staff for the Arizona Disabled American Veterans (DAV), said the proposal is contained in a resolution expected to be approved by delegates to the group's state convention later today in Hotel Westward Ho.

“The 500-bed hospital is needed because of increasing numbers of patients requiring this curative climate,” Shaud said.

He personally favors an “expanding hospital”



program whereby the staff could be shifted north or south as needs arise.

He said the local VA hospital is taxed to capacity in winter so that local residents, who are just as eligible for care, cannot get admission to beds.

Shaud suggested fitting ailments to the climates as part of his expanding hospital program.

More and more World War II veterans are moving here, and more of them are needing hospitalization, he noted.

The three-day convention ends tomorrow with an election.

### **Texas Medical Association Resolution OPPOSITION TO THE NATIONALIZATION OF MEDICINE**

WHEREAS, the House of Delegates of the American Medical Association in June 1963 called for a re-evaluation of its previous endorsement of "bricks-and-mortar" federal aid, and

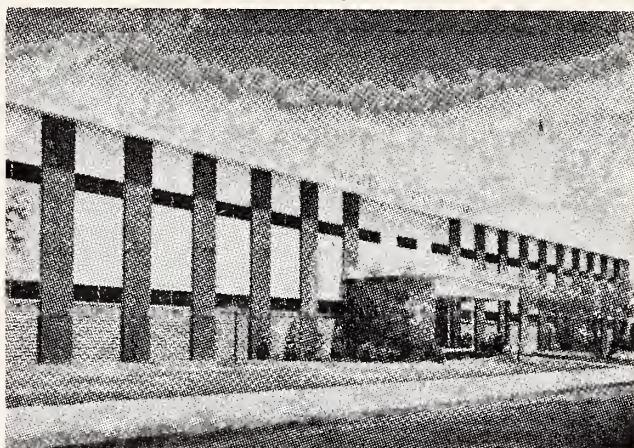
WHEREAS, evaluation of the Public Health Service Act (1944) and subsequent additions and amendments thereto — beginning with Hill-Burton Act of 1946 and continuing through the present Harris proposals (HR 10041 and HR 10042) — lends credence to the opinion that all these acts are part of a steadily evolving plan to accomplish the Nationalization of Medicine attempted earlier by the discredited Wagner-Murray-Dingell bills, and

WHEREAS, the ruling of the United States Fourth Circuit Court held that acceptance of Hill-Burton funds by private hospitals puts such hospitals into a Federal-State public health program and makes them a part of "State action"; therefore

RESOLVED, that the House of Delegates of the Texas Medical Association hereby reaffirms its continuing opposition to "bricks-and-mortar" federal aid; and further

RESOLVED, that the House of Delegates of the Texas Medical Association urgently calls upon the House of Delegates of the American Medical Association to thoroughly re-evaluate its conflicting stands regarding federal aid and to come out with a statement based on principle in strict opposition to all proposals which may lead to the Nationalization of Medicine, regardless of the route such proposals may take.

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	50	\$18,502.50	\$37,005.00	\$74,010.00
Company "M"	35	\$14,198.50	\$28,397.00	\$56,794.00
	50	\$17,788.25	\$35,576.50	\$71,153.00
Company "NY"	35	\$13,730.75	\$27,461.50	\$54,923.00
	50	\$17,466.75	\$34,933.50	\$69,867.00
Company "E"	35	\$13,507.00	\$27,014.00	\$54,028.00
	50	\$17,482.25	\$34,964.50	\$69,929.00

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**Contraindications:** None reported.

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**Supplied:** 'Soma' Compound is available in orange, scored tablets; bottles of 50. 'Soma' Compound with Codeine (narcotic order form required) is available in white, lozenge-shaped tablets; bottles of 50.



HARRY L. GOSS, M.D.

1880-1964

Arizona lost another of its pioneer physicians with the death of Dr. Harry L. Goss at his home in Phoenix on February 13, 1964.

Dr. Goss was born on February 20, 1880 in what was then known as Peace, Kansas but is now known as Sterling, Kansas. He grew up in that state, receiving his early education there and receiving the degree of Doctor of Medicine from the Washburn College of Medicine along with the University of Kansas in 1910. He was staff physician for the Kansas State Hospital for the insane until about 1912 when he established a general practice in Horton, Kansas. He left this practice to enter the Army Medical Corps in which he served during World War I. During the service he was sent to Camp Harry J. Jones in Douglas, Arizona in 1919 and was discharged as a captain in the Medical Corps from Douglas, Arizona in 1920. He brought his family to Phoenix, Arizona in the same year and established a practice in radiology and clinical pathology with his office and laboratories in the Ellis Building at Second Avenue and West Monroe. He moved into new offices on West McDowell Road in Phoenix a few years before his retirement in 1957.

In 1912, Dr. Goss married Miss Grace Jenkins and two sons were born into the family, the older one, Bill, now living in Denver and the younger, Harry, now an attorney in Phoenix.

Dr. Goss practiced his chosen profession with a quiet dignity and dedication. He was not a "joiner" in the usual sense but did join in and work with those organizations in which he felt he could be of real service. He was a member of his county and state medical societies, a charter member of the Arizona Radiological Society and a member of the American Medical Association. During his medical practice in

Phoenix his services as an expert medical witness were highly valued and he was frequently called in this capacity.

Outside the medical field, his interests were varied. He was an active member of the Presbyterian Church and in his earlier years both he and Mrs. Goss sang in the choir. He has held membership in the Kiwanis Club, the Y.M.C.A. and served for a number of years as a member of the Sheriff's Posse of Maricopa County. He was very fond of sports including baseball, football, boxing and hunting and in his earlier years, participated in a number of them. Because of his firm conviction that every boy should be taught how to safely handle a gun, he spent many hours with his own sons in target practice and hunting activity.

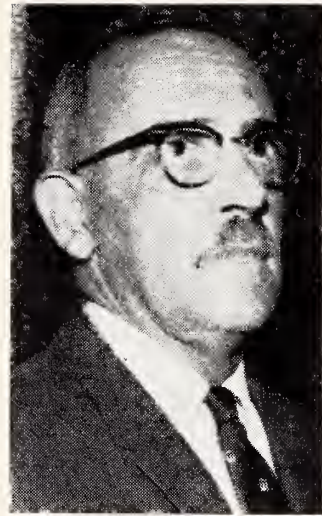
His love of woodworking as a hobby provided him many hours of comfort and useful diversion after his retirement. The beautiful products of this hobby, lamps, magazine stands, cradles, other articles of furniture, bore testimony to his passion for perfection. Every curve is carefully carved, every joint is perfectly fitted and every piece of wood is beautifully finished and carefully placed to show forth its maximum beauty. There is something symbolic and significant about this for his whole life was like that. He sought no fame or self-aggrandizement and few of his friends ever knew he received a citation from the University of Arizona for his outstanding work in medicine. His chief concern seemed to be that his work would be good and acceptable and so it was.

He will be missed. His life on earth has been lived but the challenge and the inspiration of that life still lives and walks among us.

R. Lee Foster, M.D.



**Thomas S. Collings, Sr., M.D.**  
**1915-1964**



Dr. Collings was born in Philadelphia, Penn. on May 4, 1915. As a small boy he moved with his family to Riverton and Moorestown, New Jersey. There he attended grade school at Friends Meeting Schools. He graduated cum laude from The Hill School, Pottstown, Penn. in 1933, here he won the Colgate Cup for debating and was manager of the baseball team. He graduated Magna Cum Laude from Princeton University in 1937. He was salutatorian of his class and was elected to Phi Beta Kappa. His great interest was in the classics and he received a teaching fellowship in Latin and Greek at the Graduate School of Princeton University. A remarkable aspect of his college achievement was that he accomplished it on scholarships and while holding extra-curriculum positions on campus. He gave up the fellowship after three months to enter the University of Chicago for premedical work. He then entered and attended for four years the University of Pennsylvania Medical School, also on a scholarship, from which he received his MD degree in 1942. He then received an appointment to the Philadelphia General Hospital for his internship, an honor also as these appointments were very difficult to receive at this time.

He entered the Army Medical Corps in 1943 and served with the 420th. Medical Collecting Company at Camp Carson, Colorado, Camp Roberts, California, Fort Benning, Georgia and Camp Rucker, Alabama, during which time he was attached to the 607th. Field Artillery Bat-

talion. He served overseas a year in the Normandy Campaign with the Collecting Company being caught in the Battle of the Bulge and going on through to the Elbe River, even in to Berlin for a brief moment. He was attached to the 9th. and 7th. Armies, Patton's 3rd. Army and 82nd. Airborn Division. He received the Victory Medal, American Campaign Medal, European African Middle Eastern with two Battle Stars.

When he returned home, he was most fortunate in receiving an appointment as pediatric resident at the Philadelphia General Hospital from 1947-1949 with an additional six months at the Municipal Hospital for contagious disease. He served on the pediatric staff of the Philadelphia General Hospital, Presbyterian Hospital and Misericordia Hospitals from 1950-1956.

He was also active in boy scouting and served as their physician in his area. He was also a member of the Philadelphia County Department of Education-school district. He taught the nurses at the Presbyterian Hospital. He came West in 1956 and was on the pediatric staff of The Good Samaritan Hospital and St. Joseph's Hospital before joining the staff of the Phoenix Indian Hospital in 1960.

He was married March 29, 1941 to the former Harriet Patricia Devoe of New York City and had a daughter, four sons and a grandson: Patricia Collings Curtis, Tom, Jr., Joseph Lane, III, F. William Devoe Collings, Aldan Devoe Collings and the grandson, Kevin Blayney Curtis.

Robert Z. Collings, Jr.





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## MEDICAL ECONOMICS COMMITTEE

Meeting of the Medical Economics Committee of The Arizona Medical Association, Inc. held Wednesday, April 8, 1964,

### Present

Drs. Brewer, W. Albert, President-elect; Chesser, Ian M., Chairman; Eisenbeiss, John A.; Henderson, Charles E., Secretary; Herzberg, Benjamin.

### Staff

Messrs. Boykin, Paul R., Assistant Executive Secretary; Carpenter, Robert, Executive Secretary; Robinson, Bruce E., Executive Assistant.

### Guest

Colonel Frank E. Stillman, Jr., Executive Officer, Office for Dependents' Medical Care, Denver, Colorado. Excused

Drs. Blute, Jr., James F.; Phillips, Melvin W.; Steen, William B., President.

## MINUTES

The Chairman, Doctor Chesser introduced Colonel Frank E. Stillman, Jr., Executive Officer for the Office for Dependents' Medical Care, to the members in attendance and Colonel Stillman was requested to say a few words relative to his visitation.

Colonel Stillman's comments included but were not limited to the fact that while the ratio for enlisted men versus commissioned officers throughout the country is ten to one, in Arizona, the commissioned officers and enlisted men ratio is 13.6% by 87.4%; that hospital admissions in the dependents' medical care program in Arizona in 1963 were dependents of officers 17% and dependents of enlisted men 83%; that Arizona is the fifteenth highest state in medical claims paid and about average from that standpoint.

In 1963 in round figures, one million dollars was paid to hospitals and physicians and about equally divided; that the weighted income figures relative to military personnel includes salary, housing allowances, rations and incidentals, such as flight pay, etc. but does not include reduction in cost through PX provisions, health insurance costs, working wives and "moonlighting."

Considerable discussion was held between all members of the committee and Colonel Stillman relative to the basis of the request by ODMC that the fee schedule be lowered for Arizona, with the committee responding with reasonable assurances as to the necessity of maintaining minimally the previous fee schedule in effect. Colonel Stillman indicated that he would recommend continuance of the present fee schedule if the committee will "give me some facts" to support the contention of the committee that the fees for private patients with similar incomes are not lower than medicare paid allowances and requesting response as early as possible.

The committee determined to accept and refer to its Board of Directors for action, Colonel Stillman's recommendation of continuance of the present fee schedule for the dependents' medical care contract currently in effect.

Meeting adjourned at 10:05 P. M.

Charles E. Henderson, M. D.  
Secretary

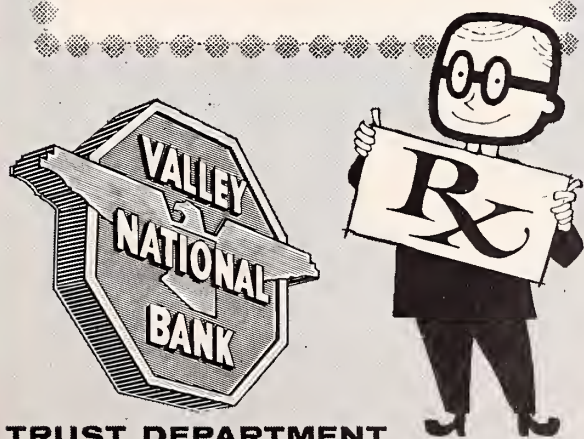
## "Dear Doctor:"

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## 1964 Annual Meeting



Doctor Clare Johnson at the Luau with his wife, Mary Anne, on the left, outgoing president of the Woman's Auxiliary to ArMA and Patty Lee, regional vice president of the Woman's Auxiliary to AMA.

### *Bowling Tournament*

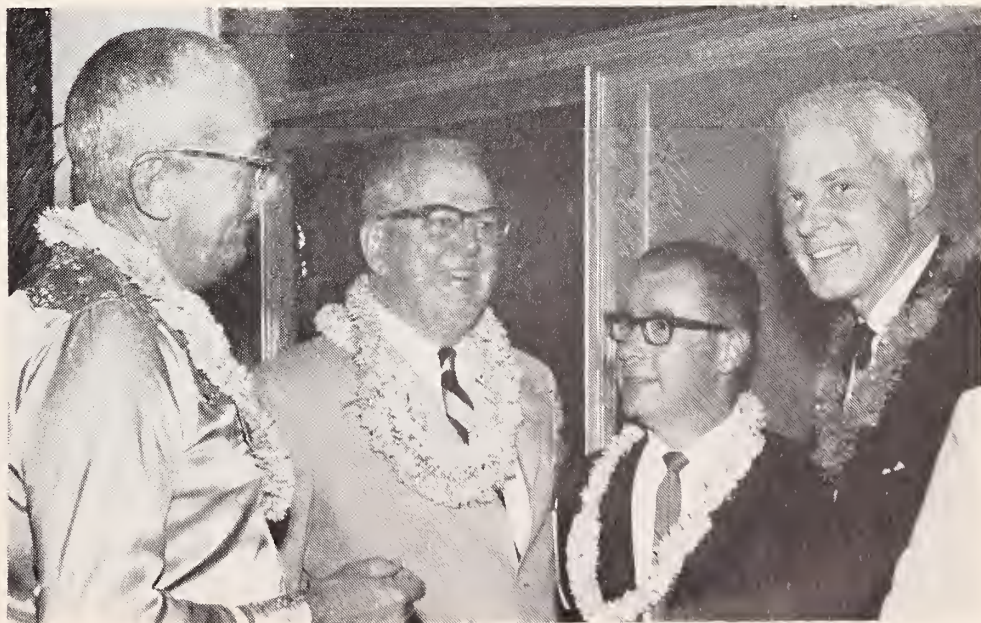
Participating in the Annual Bowling Tournament associate with the annual meeting of ArMA were the following Doctors: Art Dudley, Warren Eddy, Charles Van Epps, Earl Baldwin, Bob Antos, Frank Eisenhardt, Gar Wood, Max Palmer and Jim Anderson. Also Howard Hedges and Paul Boykin. Woman's Auxiliary members adding to the roster were Alice Anderson, Debby Eisenhardt, Zeta Palmer and Helen Sitterly.

The tournament was held on April 30 at the Ranch Lanes in Chandler.

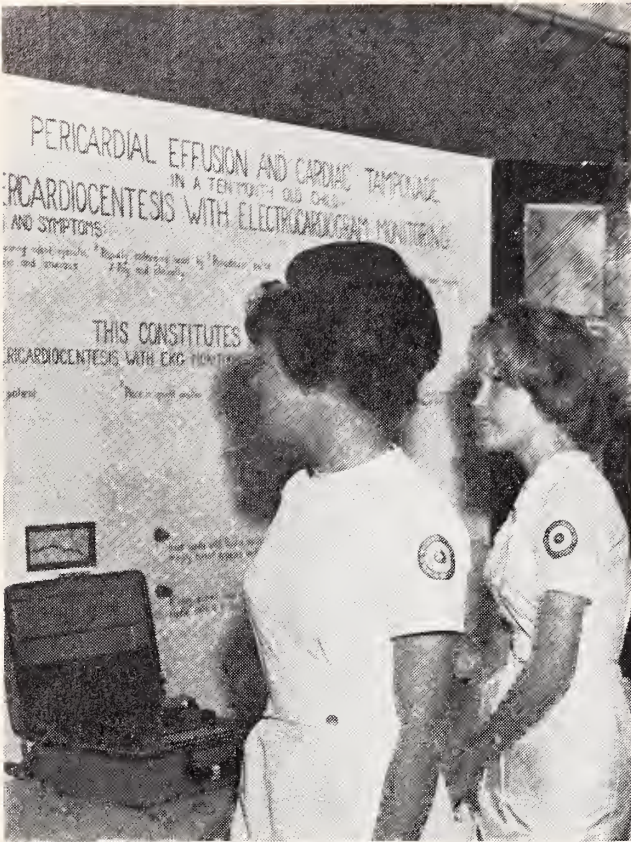
Those who took home trophies included all of the ladies as well as Doctors Palmer, Eisenhardt, Wood, Dudley, Eddy, Anderson, Baldwin and Antos.

Doctor Charles Van Epps served as tournament chairman.

Outgoing president of ArMA Doctor Bill Steen, second from left seen chatting at the Luau with Doctor A. J. Ochsner of Yuma, Richard G. Layton, field representative of the American Political Action Committee, and Doctor Monte DuVal, Dean of the College of Medicine at the University of Arizona.





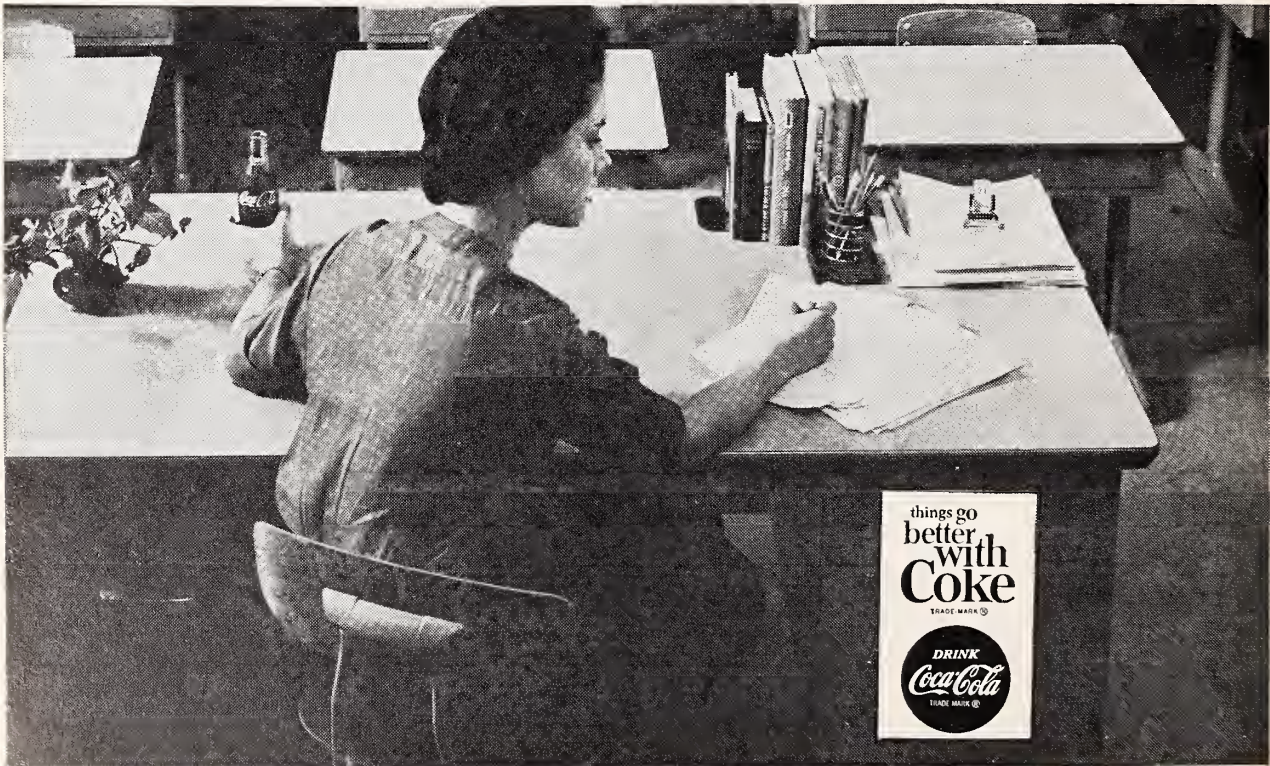


One of the interesting scientific exhibits being viewed at the Annual Meeting by students from the Southwestern Preparatory School.

GOLF WINNERS

A total of 47 doctors participated in the annual golf tournament at Chandler during the 73rd Annual Meeting of ArMA at the San Marcos golf course.

Chairman Jack Zeluff presented trophies and awards. Recognition was given to the following doctors: Jim O'Hare received the award for the wettest golfer (it must have been a deep pond!); Ken Johnson was honored for having the highest score and presented the Ross Laboratories trophy; Bob Leonard won the driving contest; Ben Axel was closest to the hole on the eighth green and Seymour Shapiro was closest to the hole on the 13th. For never receiving a prize in a golf tournament Jack Brooks was awarded a new ball, courtesy of the chairman. Bob Bullington was honored for the lowest net with club handicap. Winners in low net competition were Tim Louis, first; Jack Zeluff, second; and Tom Read, third. First place trophy in the low gross scoring was Tom McWilliams with Warren Colton, second; and Martin Kleckner, third.



Whether you're a teacher correcting exams. A student cramming for them. A housewife cleaning up after the kids. Or a businessman working late at night. Whoever you are, things go better when you pause and refresh with ice-cold Coca-Cola.



## Topics of Current Medical Interest

**T**HE Board of Medical Examiners of the State of Arizona, at a regular meeting held Saturday, January 18, 1964, issued certificates to practice medicine and surgery in this State, to the following doctors of medicine:

AGUILAR, Jorge Vazquez (GP), 4857 East 24th St., Tucson, Arizona.

ANGELCHIK, Jean (S), 2040 W. Bethany Home Rd., Phoenix, Arizona.

BADILLA, Ramon Alberto Marquez (GP), 544 South Sixth Ave., Tucson, Arizona.

BASCOM, George William (I), Elgin, Arizona.

BLOOMENTHAL, Ernest David (GS), 104 S. Michigan Ave., Chicago 3, Illinois.

BUSHARD, Wilfred Joseph (OPH), 849 Medical Arts Bldg., Minneapolis 2, Minn.

CAHOON, Stuart Newton (P), 1481 South King St., Honolulu 14, Hawaii.

CATA-BALAI, Gabriel Luis (CHP), 1415 N. Fremont Ave., Tucson, Arizona.

CERNA, Peter Joseph (ALR), 1308 South Bristol, Tucson, Arizona.

CHARNEY, Stanton Mel (OPH), 2800 S. Ellis Ave., Chicago, Illinois.

CHERMAK, Francis Gordon (GP), 444 - 4th St., International Falls, Minnesota.

CHRISTY, John Roger (GP), 938 West 33rd St., Erie, Pennsylvania.

CLEMINGER, Allan Keith (OBG), 3813 East Pasadena Ave., Phoenix 18, Arizona.

CORBIN, Jr., Charles (P), Vanderbilt University Hospital, Nashville, Tennessee.

CORRADO, Albert Guy (A), Medical Arts Bldg., Richland, Washington.

GEORGE, Robert Ellis (GP), 1417 Highland Way, Corvallis, Oregon.

GOODMAN, Gerald Neil (GP), Wadsworth General Hospital, Los Angeles 25, California.

GRABB, Samuel Jose (U), 6142 East Oak St., Tucson, Arizona.

GREASON, Thomas Loftus (NP), 677 Broad St., Providence, Rhode Island.

HOHNER, Joseph John (GP), Box 119, Route 1, Antioch, Illinois 60002

HORWITZ, Bernard (GP-Proctology), 4753 North Broadway, Chicago 40, Illinois.

HUNEKE, John Willard (OPH), Charity Hospital of Louisiana, New Orleans 25, Louisiana.

HYDE, Robert Logan (GP), 1616 Main St., Florence, Arizona.

HYLAND, John Edward Patrick (D), Student Health Service, ASU, Tempe, Arizona.

JAFFE, Jacob (GP), 501 Fox Bldg., Detroit 1, Michigan.

JOHNSON, Leonard Morris (S-GP-PD), 1235 West Main St., Smethport, Pennsylvania.

JONES, Harold William (GP), 2417 Pierce, Sioux City, Iowa.

KEHLE, A. Paul (OBG), Good Samaritan Hospital, Phoenix 6, Arizona.

LUNDGREN, Edward Steven (S), 45 Briar Road, Golf, Illinois.

LYNN, Hugh Bailey (PdS), Mayo Clinic, Rochester, Minnesota.

MATRON, Pierre Etienne Emmanuel (Path), Maricopa County Hospital, Phoenix, Arizona.

MORRIS, III, John William (R), 1550 E. Indian School Road, Phoenix, Arizona.

MORSE, James Arthur (GS), 4831 Hardwick Suite 102, Lakewood, California.

Moss, Harold Krieger (I), 210 Wm. Howard Taft Road, Cincinnati 19, Ohio.

NEAL, Jr., Marcus Pinson (R), Box 151 M.C.V. Station, Richmond 19, Virginia.

NICKAS, George Michael (I), 350 West Thomas Road, Phoenix, Arizona.

NOON, Matthew Joseph (C), 1822 East Luke Ave., Phoenix 16, Arizona.

RAULOT-LAPOINTE, Jacques (GP-R), 1518 West Windsor Ave., Phoenix, Arizona.

SACCA, Joseph Domenick (A-GM), 4668 Hollis Court Blvd., Flushing, N.Y. 11358

SCHALLER, Clarence Henry (GP), 7550 North 16th St., Phoenix, Arizona.

SCHATTNER, Allen Stanley (GP), 604 West North Ave., Pittsburgh 12, Pennsylvania.

TIDWELL, Robert Austin (Pd-PdC), 738 Broadway, Seattle 22, Washington.

TITCHE, Leon Lazarus (ALR), VA Hospital, Tucson, Arizona 85713

VETROMILE, Gerard A. (OPH), 52 First St., Garden City, Long Island, N.Y.

WATERS, Darwin Diehl (ANES), 3302 Nottingham Way, Madison 13, Wisconsin.

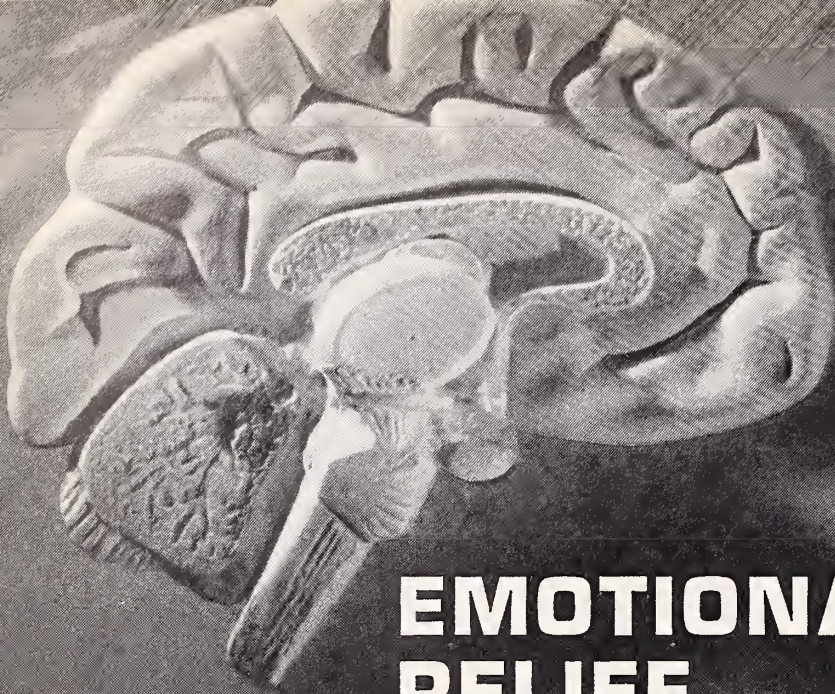
WEISSMAN, Burton Edwin (GP), 9801 35th Place, Phoenix, Arizona.

WILCOX, William Curtis-Nash (I), Veterans Administration Hospital, Tucson, Arizona.

WOOD, Richard Allen (GP), 2190 Peralta Boulevard, Fremont, California.

ZUNIN, Leonard Martin (P), 1441 Westgate, Apt. 7, Los Angeles 25, California.





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**Precautions:** Should administration of meprobamate cause drowsiness or visual disturbances, the dose should be reduced. Operation of motor vehicles or machinery or other activity requiring alertness should be avoided if these symptoms are present. Effects of excessive alcohol may possibly be increased by meprobamate. Prescribe cautiously and in small quantities

to patients with suicidal tendencies. Massive overdosage may produce lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction; withdraw gradually after prolonged use at high dosage.

*Complete product information available in the product package, and to physicians upon request.*

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**Supplied:** 'Meprospan'-400 (meprobamate 400 mg.), 'Meprospan'-200 (meprobamate 200 mg.), each in sustained-release capsules. Both potencies in bottles of 30.



May 8, 1964

May 12, 1964

Mr. Richard L. Durbin, Administrator  
Tucson Medical Center  
Post Office Box 6067  
Tucson, Arizona 85716

Dear Mr. Durbin:

Thank you for your answer to my letter regarding your paper "Is It Possible To Have Health Without Welfare?" (*Arizona Medicine*, February, 1964).

You state that the King-Anderson Bill is "... a sizeable step towards benefits throughout the full range of medical services." I would disagree with this and rather consider it a sizeable step toward ultimate federal control of patients, doctors and your hospital. To compel all the people to participate in any program needed by a few is to approve a philosophy that must lead ultimately to collective passivity in place of individual activity. If one is not permitted to assume the responsibility for his own medical care he will eventually abandon his responsibility in all other areas.

Thank you for your interest in *Arizona Medicine*.

Sincerely yours,

ARIZONA MEDICINE

Robert F. Lorenzen, M. D.  
Editor  
RL:jw

*Ed. note — Mr. Durbin's letter and other related correspondence appear in the May issue of Arizona Medicine.*

### Ophthalmologists Elect Officers

The Arizona Ophthalmological Society held its annual meeting Saturday, May 2nd, at the San Marcos Hotel in Chandler.

Guest speaker for the occasion was Dr. Bayard Colyear, Jr., of San Francisco who spoke on "Retinal Detachments." The afternoon scientific session was followed by a business meeting, social hour, and dinner.

Doctor Oscar W. Thoeny of Phoenix handed over the president's gavel to Doctor C. Truman Davis of Mesa. Named president-elect was Doctor Emery E. Royce of Tucson. Doctor James P. Calkins, also of Tucson, was elected secretary-treasurer.

Robert F. Lorenzen, M.D.  
Editor, ARIZONA MEDICINE Journal  
Box 128  
Scottsdale, Arizona

Dear Dr. Lorenzen:

I have your letter of May 8th and appreciate your reply. I would like to say that I am still misunderstood on this. The only point that I am trying to make is the wide range of benefits that is proposed in the King-Anderson Bill as a step towards providing comprehensive care. However, I disagree thoroughly with the other features of this bill and agree with your theory that responsibility must be maintained by the individual for supplying his medical needs to the maximum he can afford. As far as King-Anderson is concerned, it has none of these built-in assurances that the individual will participate in financing his medical care.

To reiterate, I feel that all pre-payment plans, regardless of their method of financing, should encourage prepaid benefits for hospital care, outpatient care, doctor's office visits, and emergency care, and that the person should seek medical care where it is most easily — financially and physically — available, and not, like Blue Cross, be forced to enter a hospital in order to have financial coverage.

My only point is that King-Anderson recognizes that payment should be made to hospitals and nursing homes, but after that, it is not an adequate or acceptable bill for financing health care for any group.

Thanks again for your reply.

Sincerely,

Richard L. Durbin  
Administrator

### Seven National Crimes

1. I don't Think.
2. I don't Know.
3. I don't Care.
4. I am too Busy.
5. I leave well enough alone.
6. I have no time to read and find out.
7. I am not interested.

### Are You Guilty?

(From the February, 1964 issue of the *Voice of Safety* put out by the Maricopa Safety Council.)



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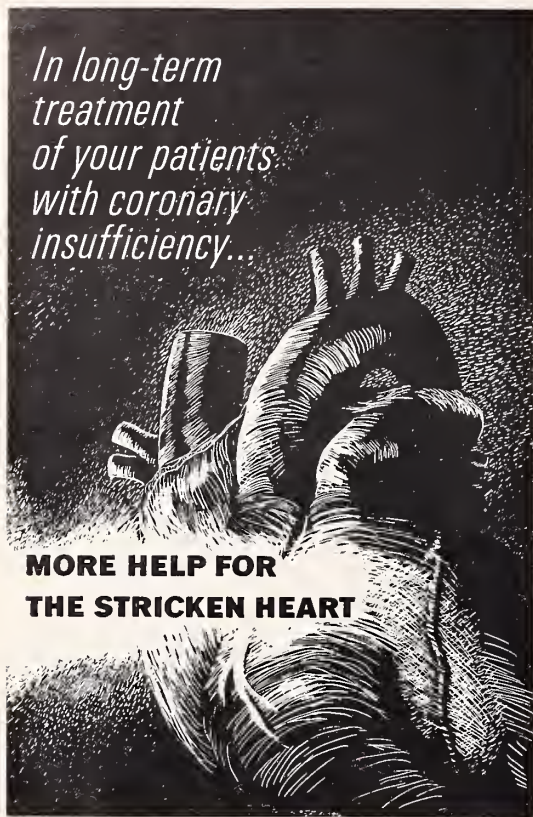
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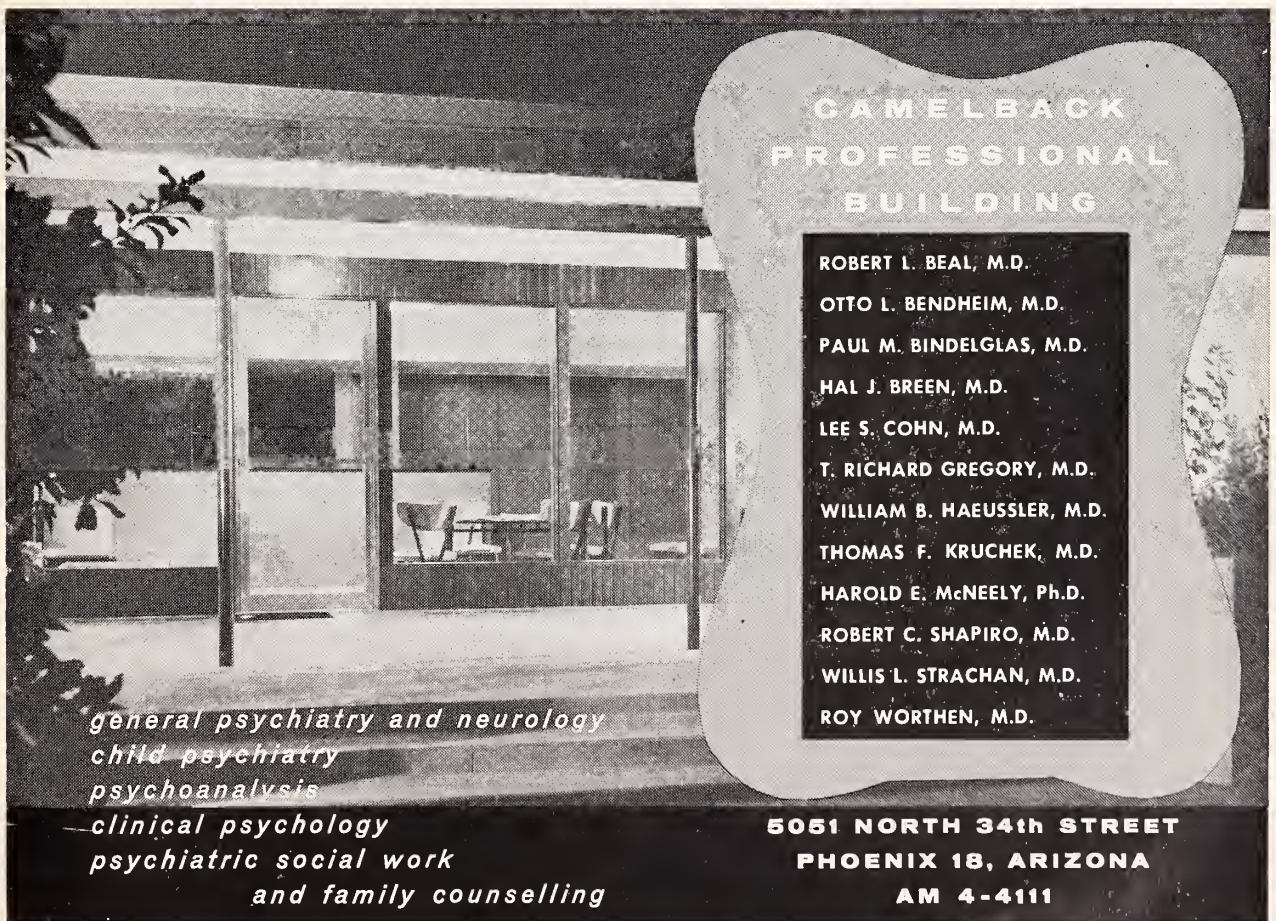
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